

VOL. XXXIX. No. 1

JANUARY 1954

MECCANO

MAGAZINE



ON THE LAUNCHING SLIPWAY

1/-

THE MECCANO MAGAZINE

DINKY TOYS

TRADE MARK REGD.



No. 40f
Hillman "Minx"
Length $3\frac{1}{2}$ in. $2\frac{1}{2}$



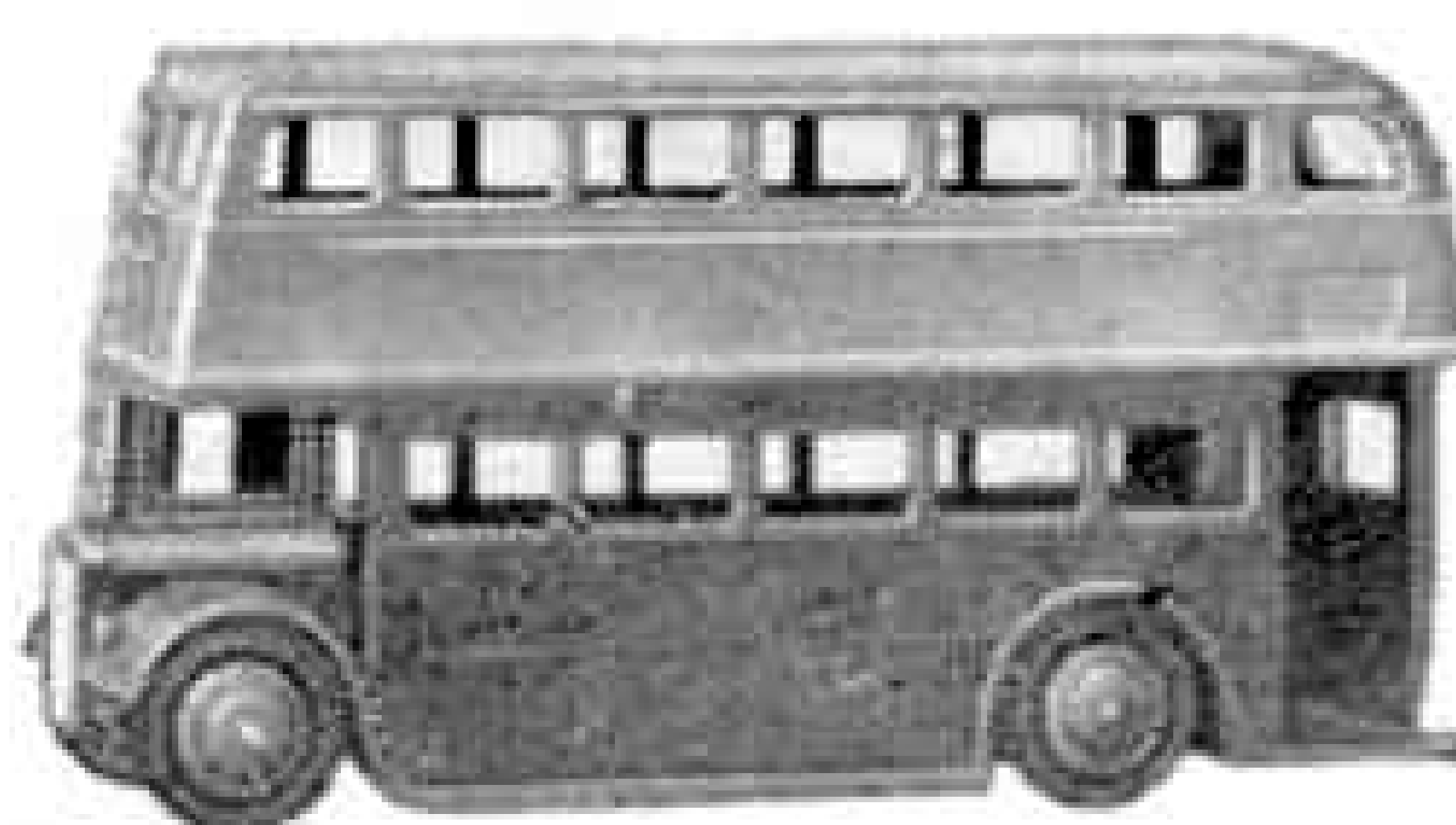
No. 140a
Austin "Atlantic" Convertible
Length $3\frac{1}{2}$ in. $2\frac{1}{8}$



No. 140b
Rover 75 Saloon
Length $3\frac{1}{2}$ in. $2\frac{1}{5}$



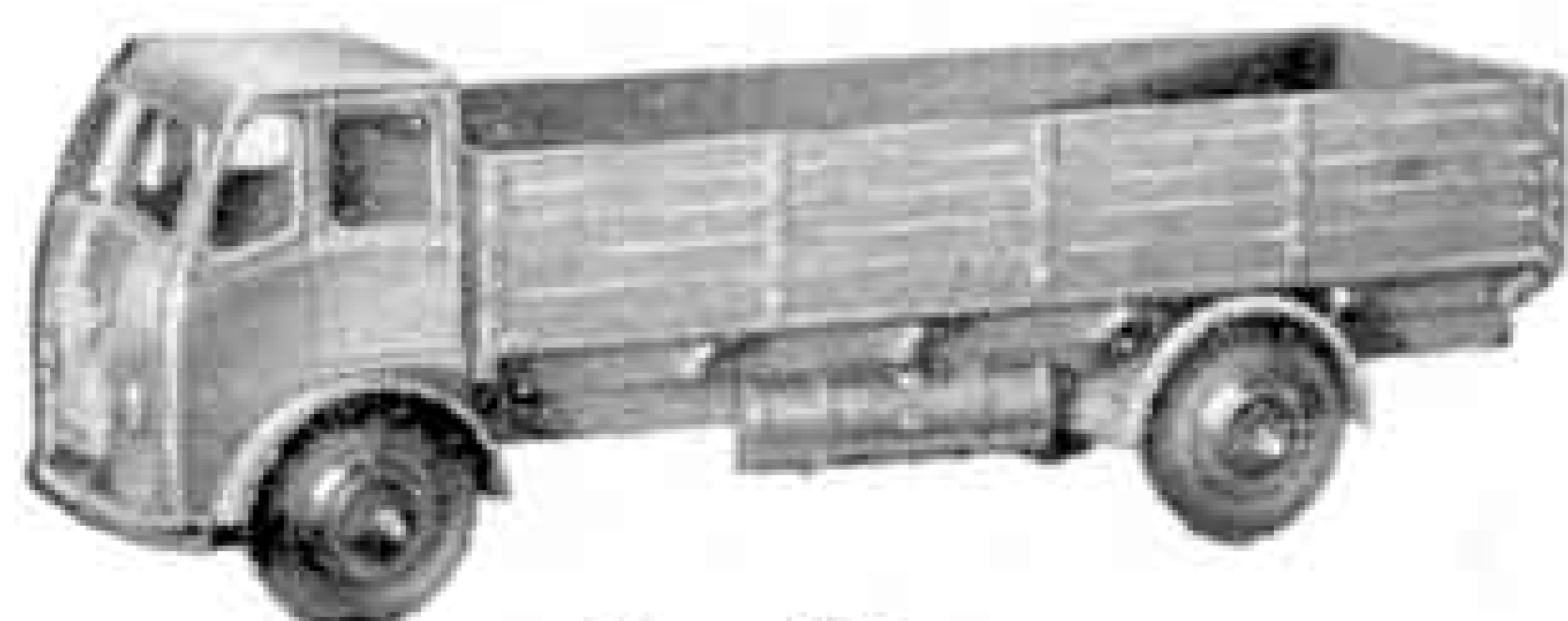
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Observation Coach
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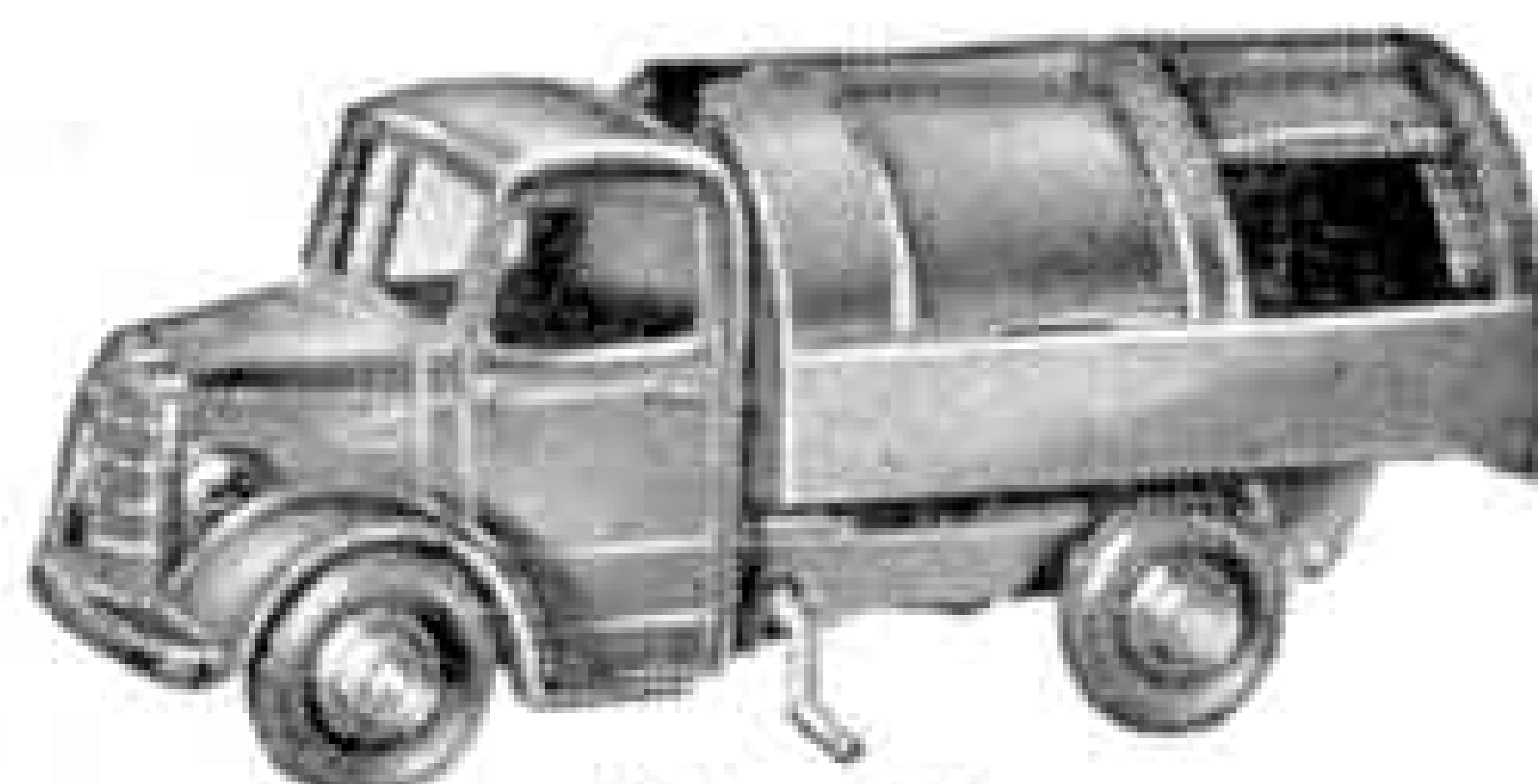
No. 29c
Double Deck Bus
Length 4 in. $3\frac{1}{9}$



No. 25x
Breakdown Lorry
Length $4\frac{1}{2}$ in. $4\frac{1}{11}$



No. 25r
Forward Control Lorry
Length $4\frac{1}{2}$ in. $2\frac{1}{4}$



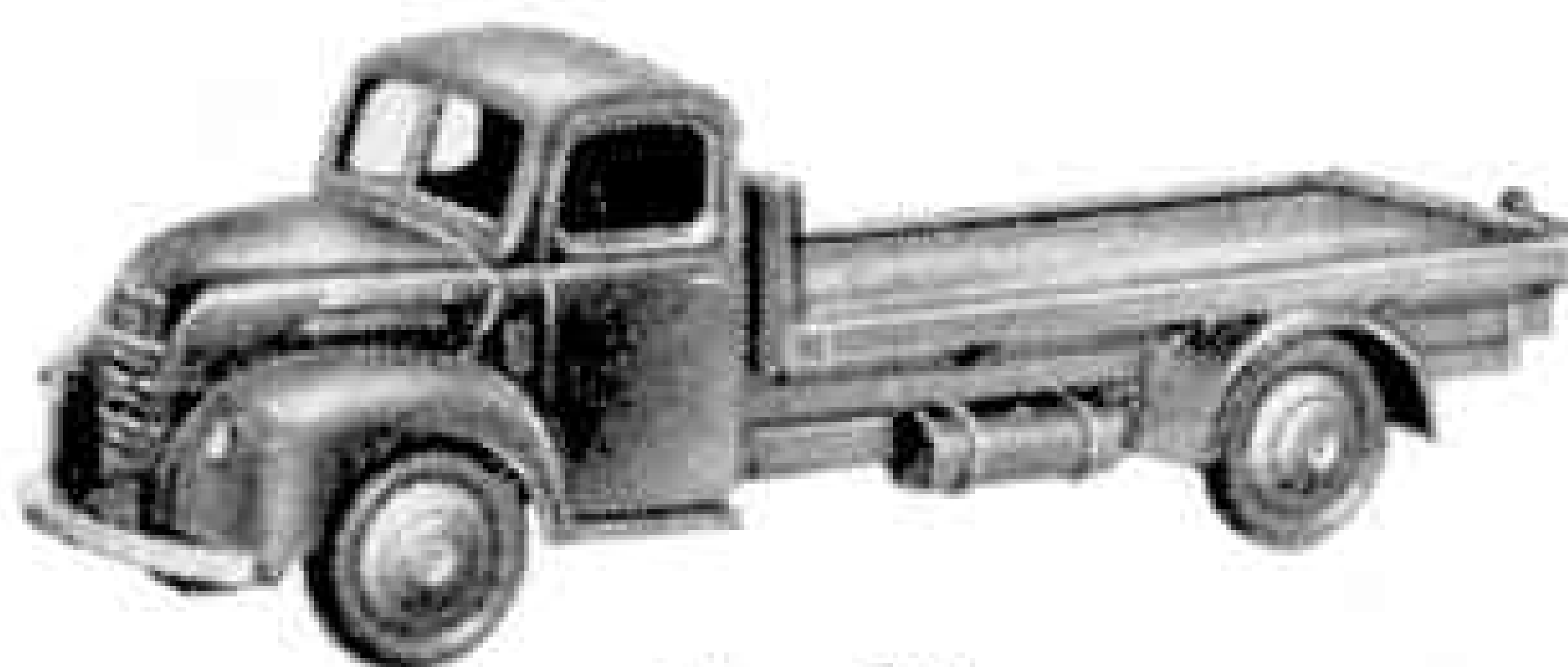
No. 25v
Refuse Wagon
Length $4\frac{1}{2}$ in. $5\frac{1}{6}$



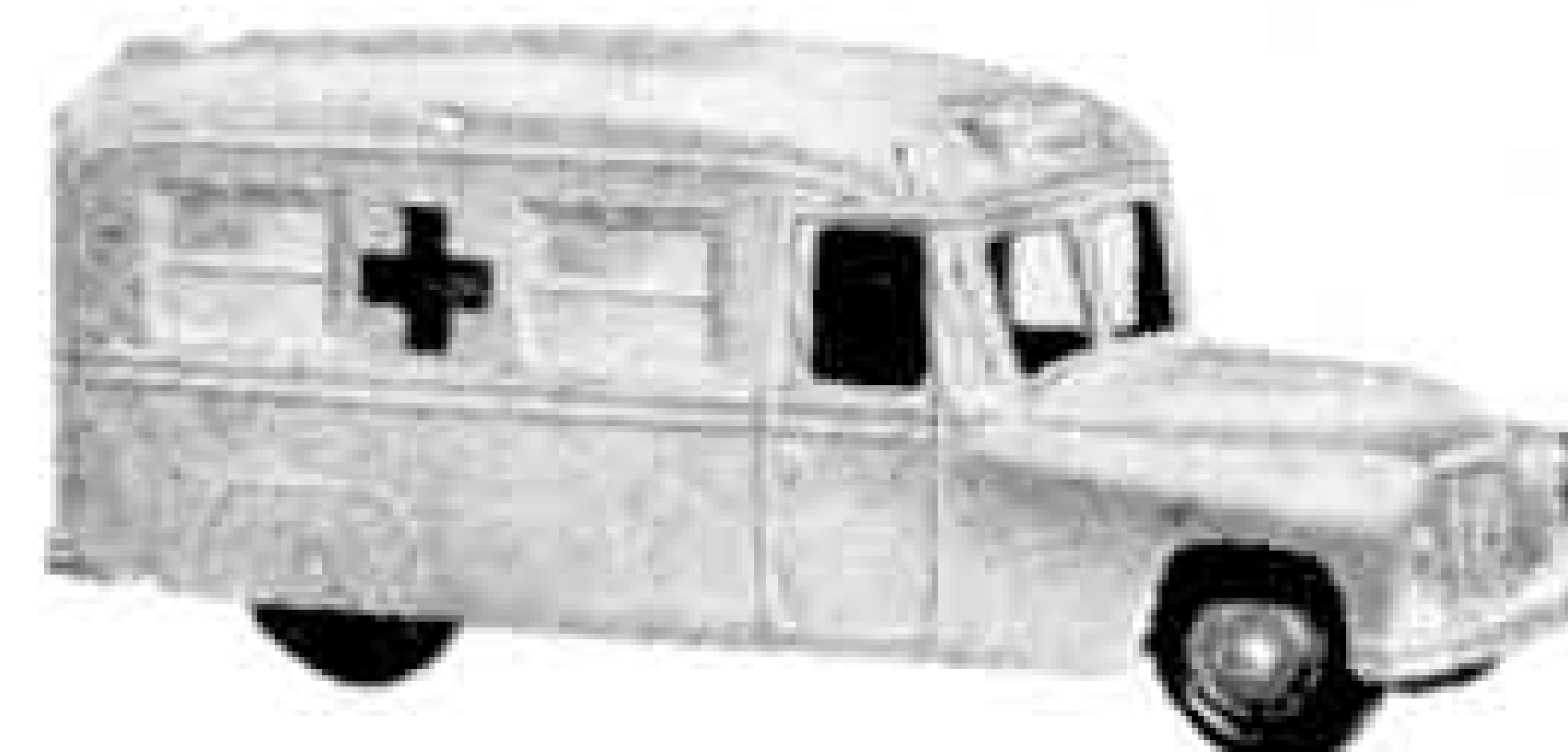
No. 27f
Estate Car
Length $4\frac{1}{2}$ in. $2\frac{1}{8}$



No. 34c
Loud Speaker Van
Length $3\frac{1}{2}$ in. $2\frac{1}{4}$



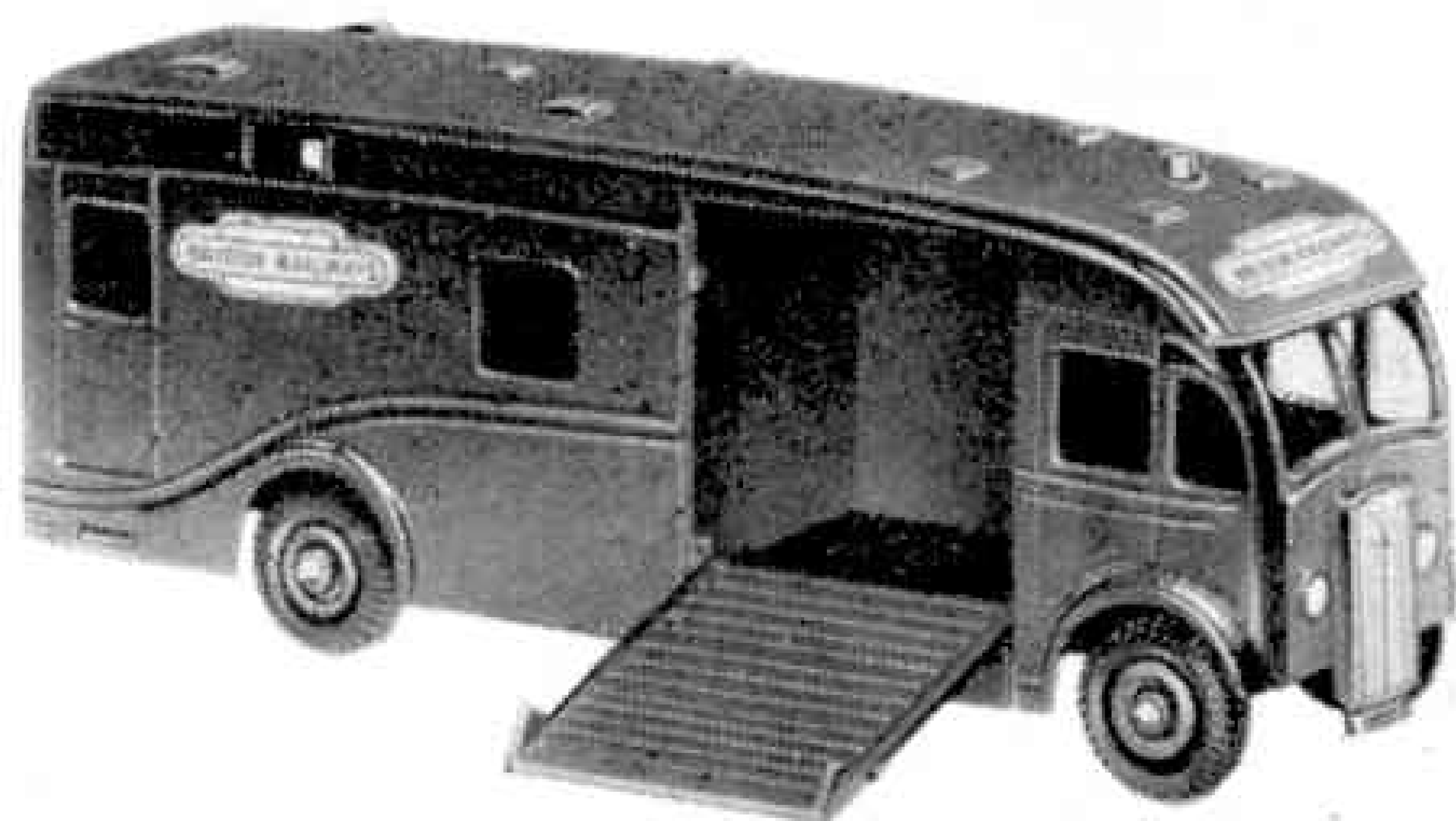
No. 30r
Fordson "Thames" Flat
Truck
Length $4\frac{1}{2}$ in. $2\frac{1}{4}$



No. 30h
Daimler Ambulance
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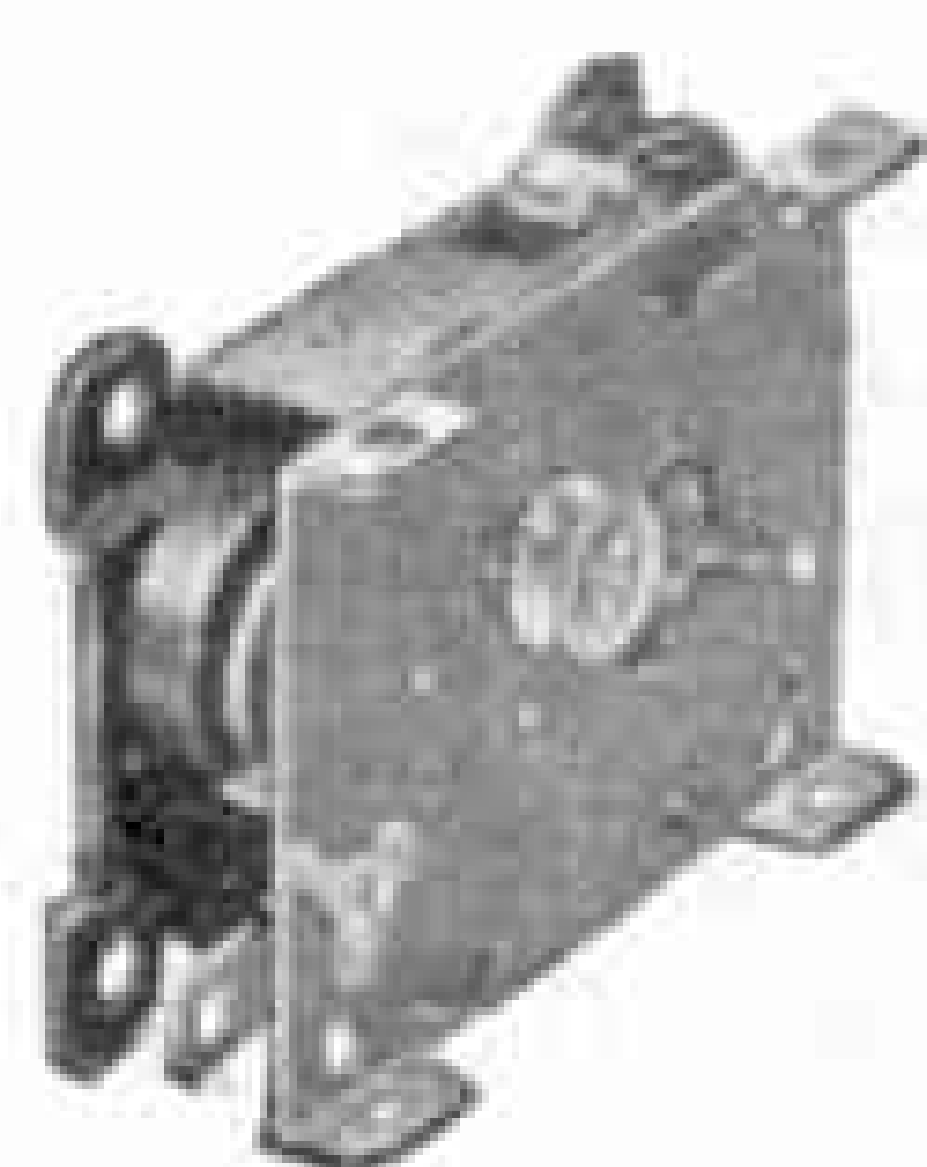
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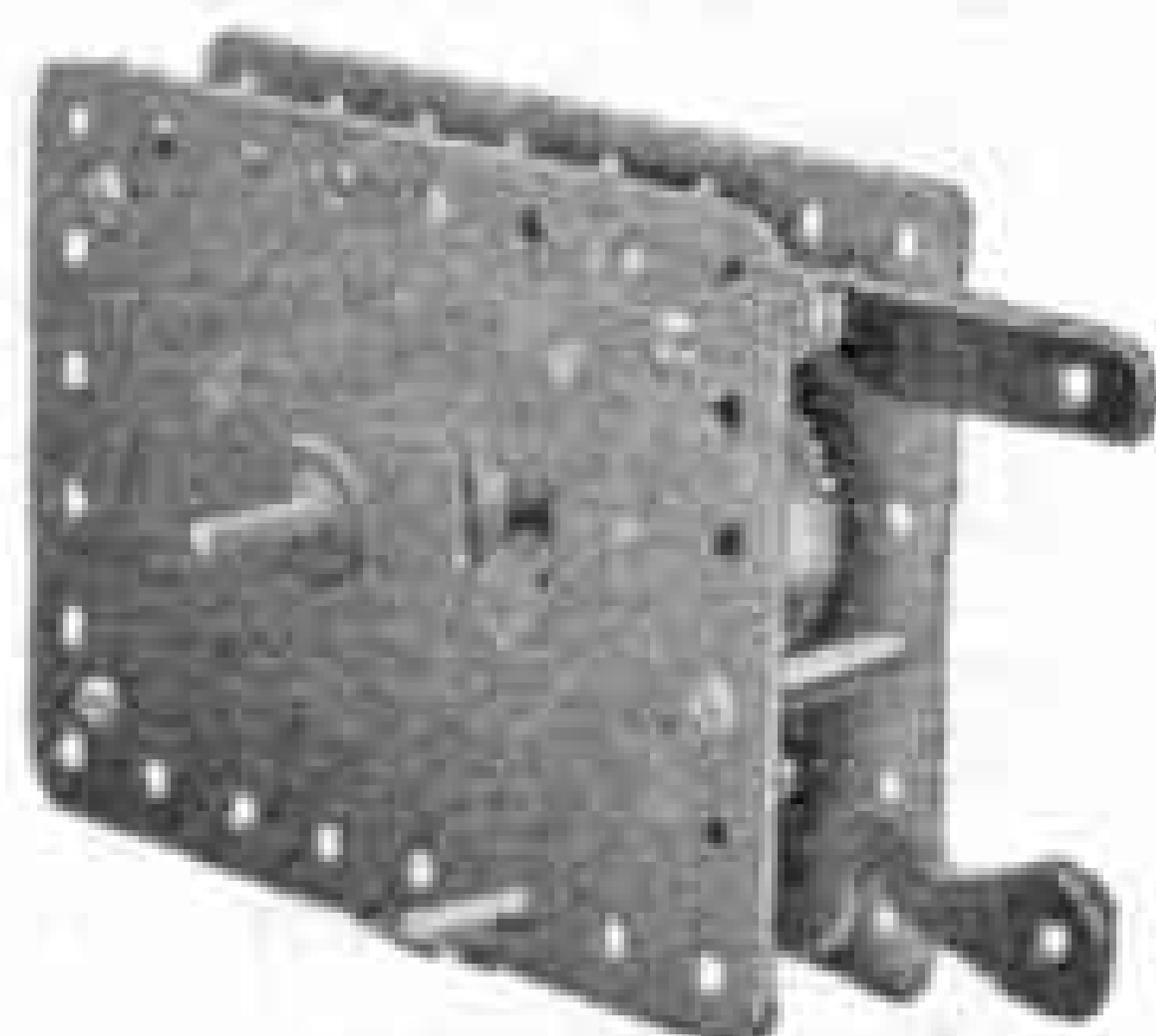


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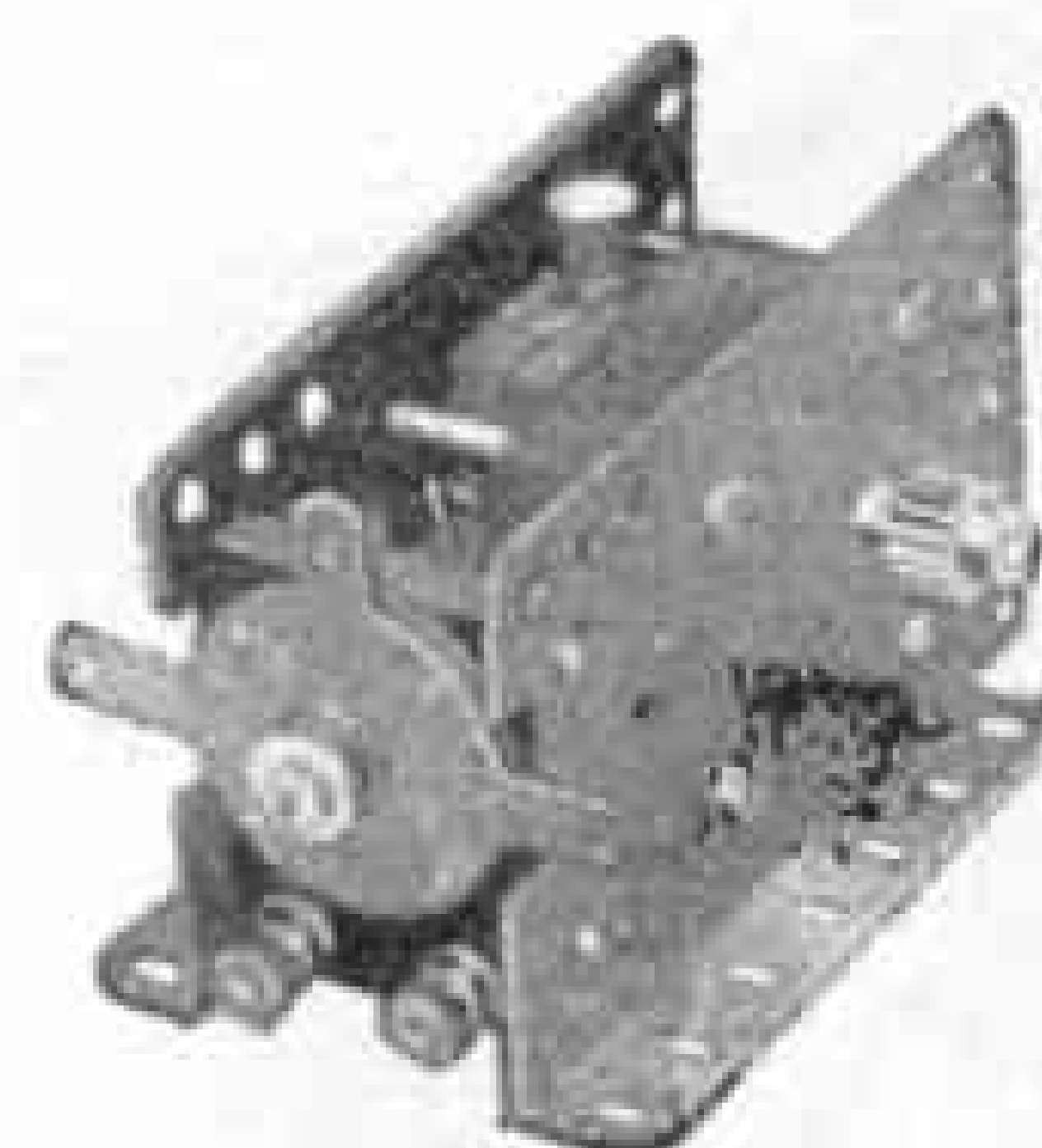
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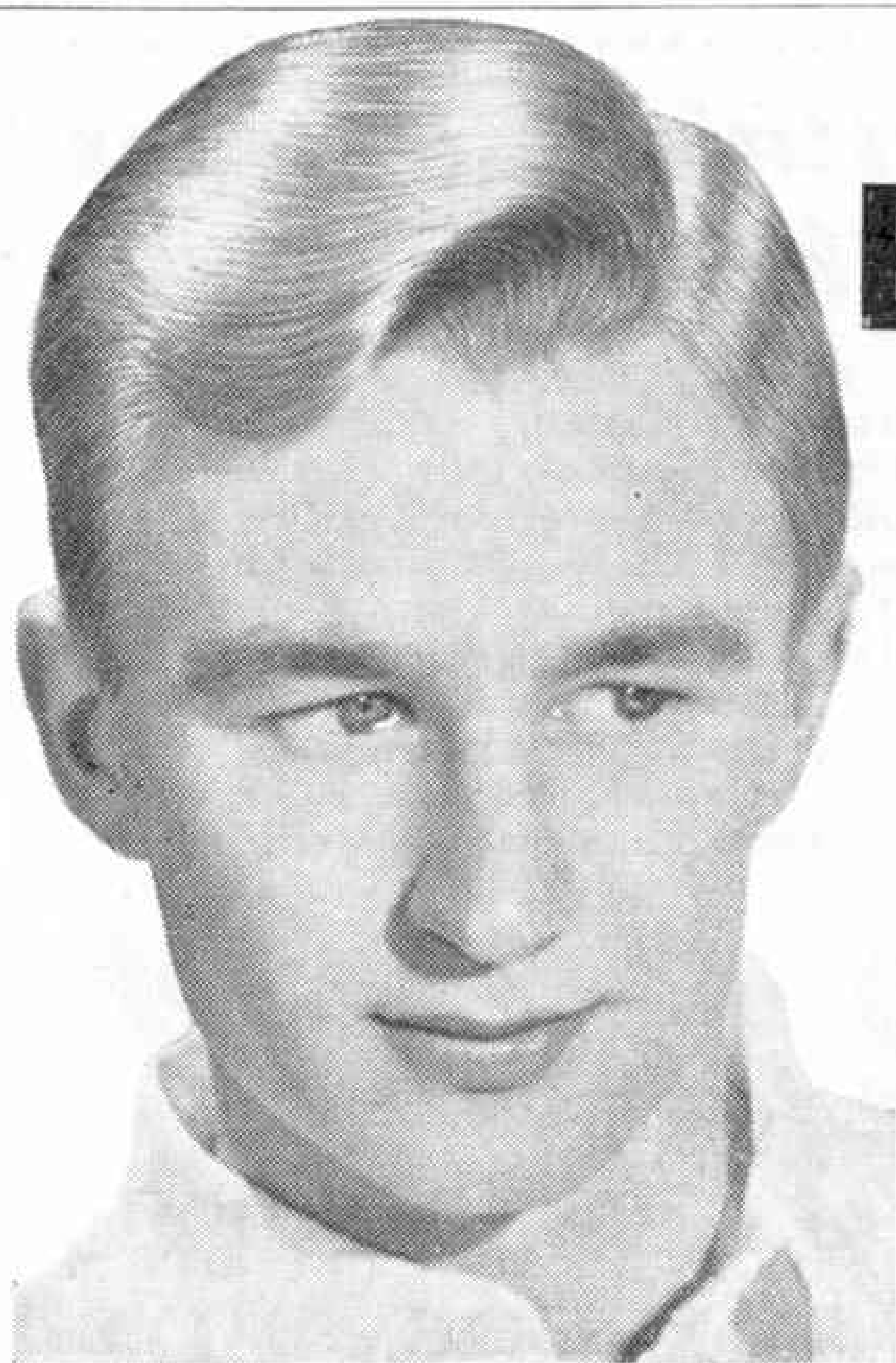
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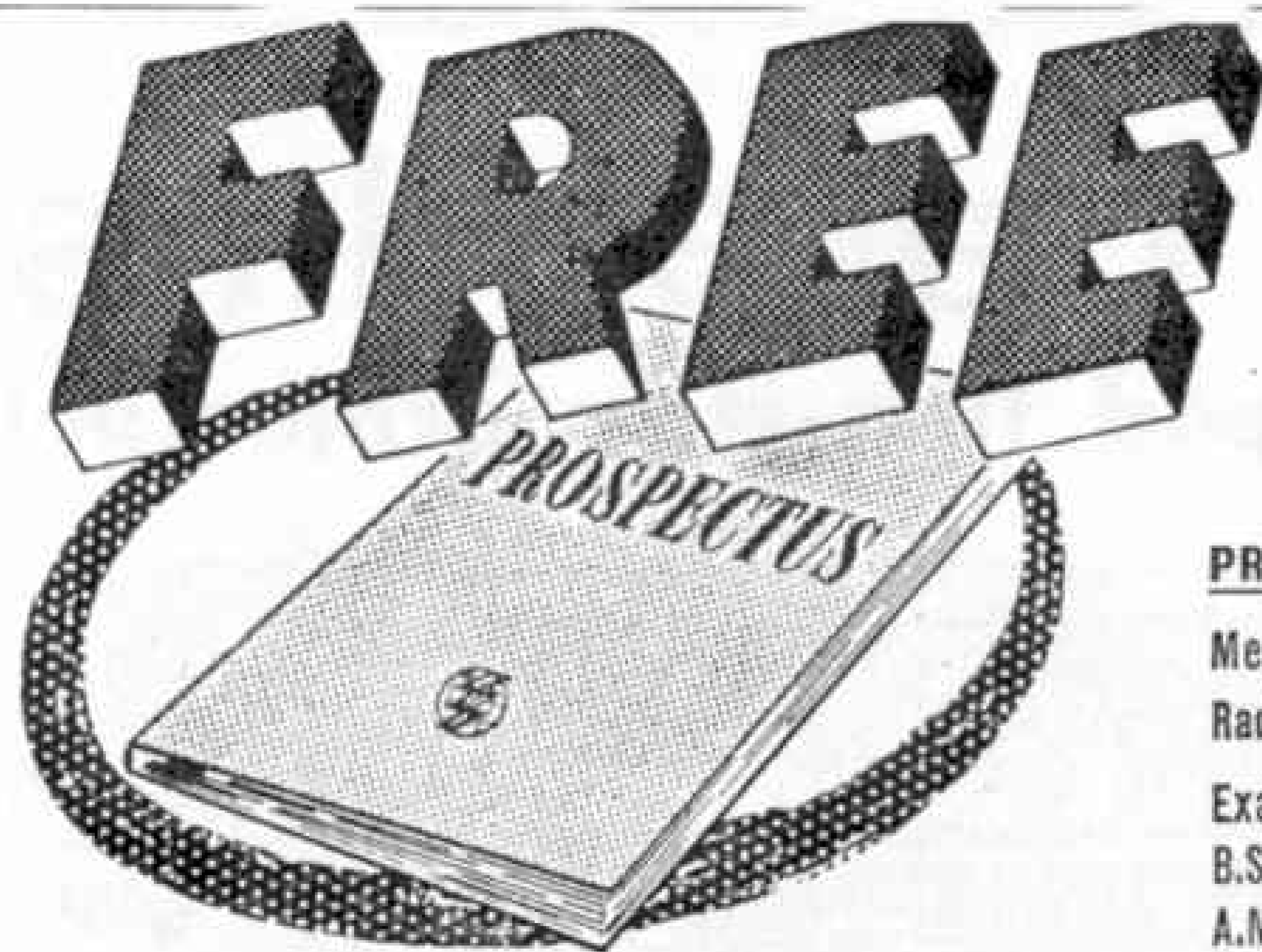
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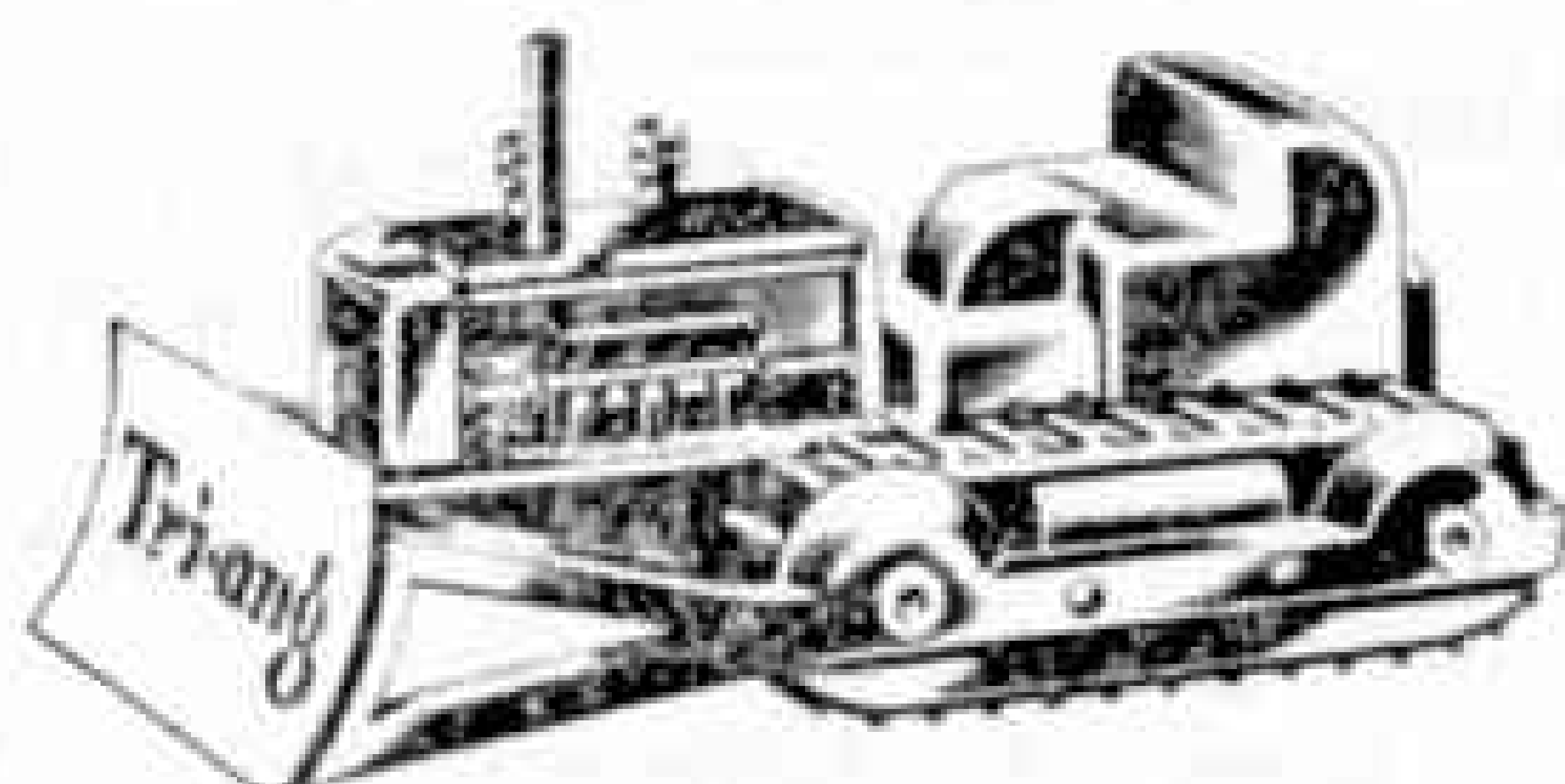
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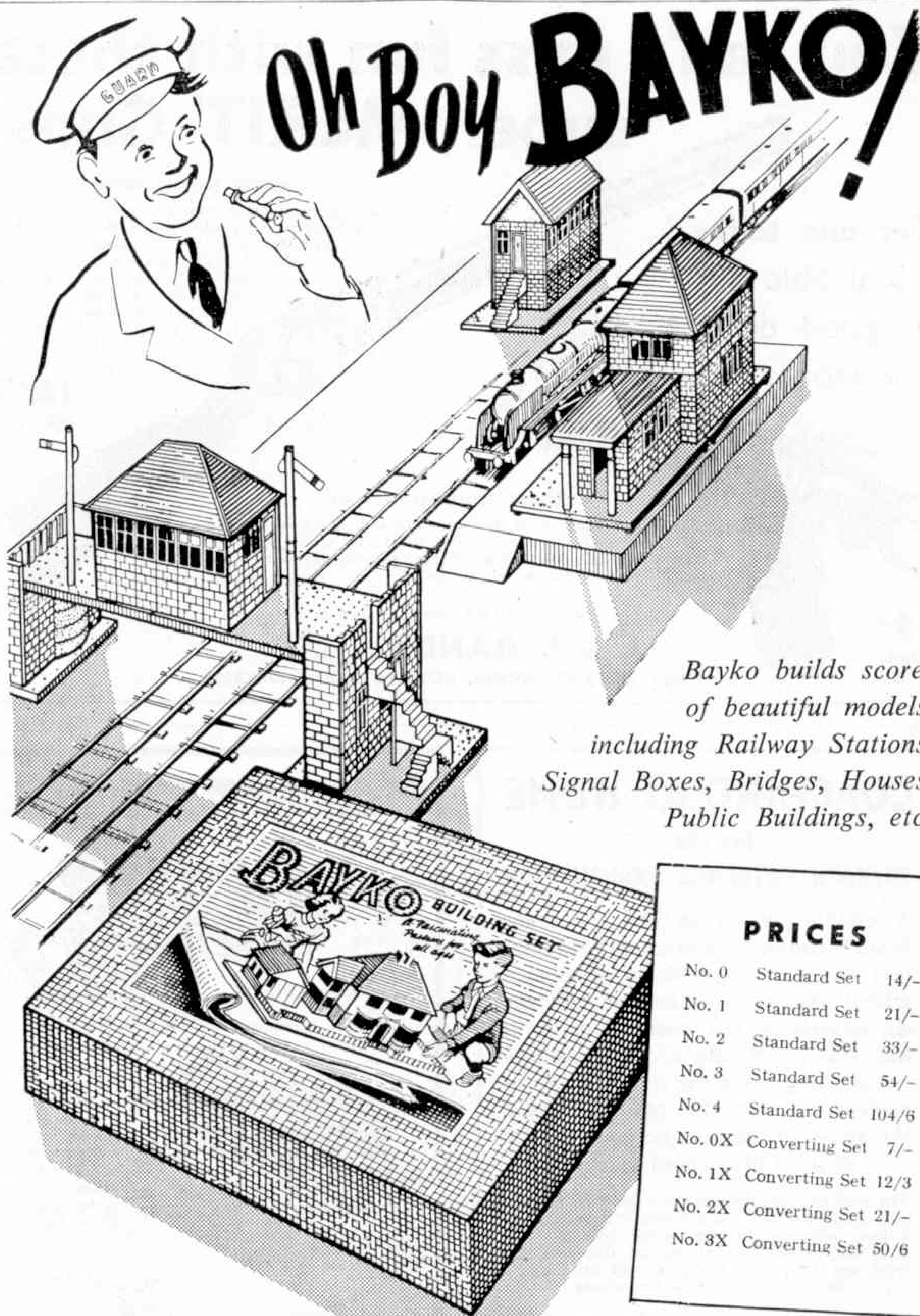


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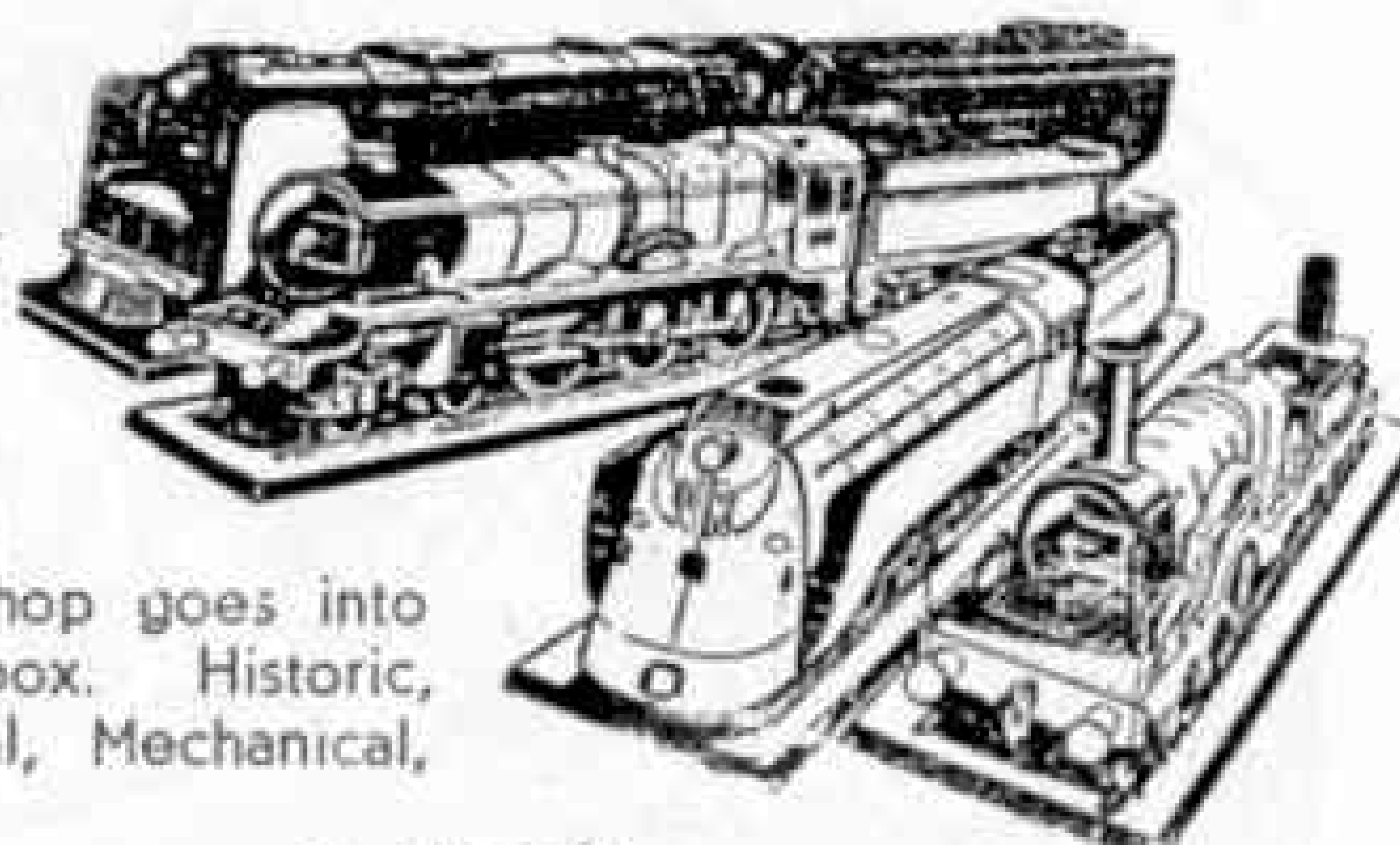
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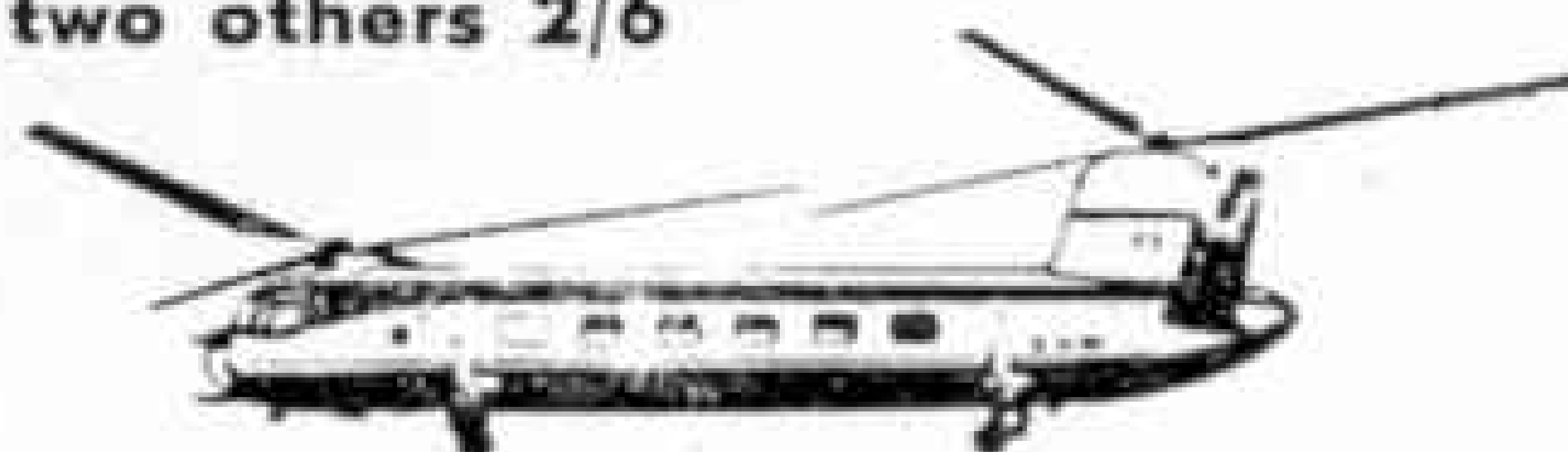
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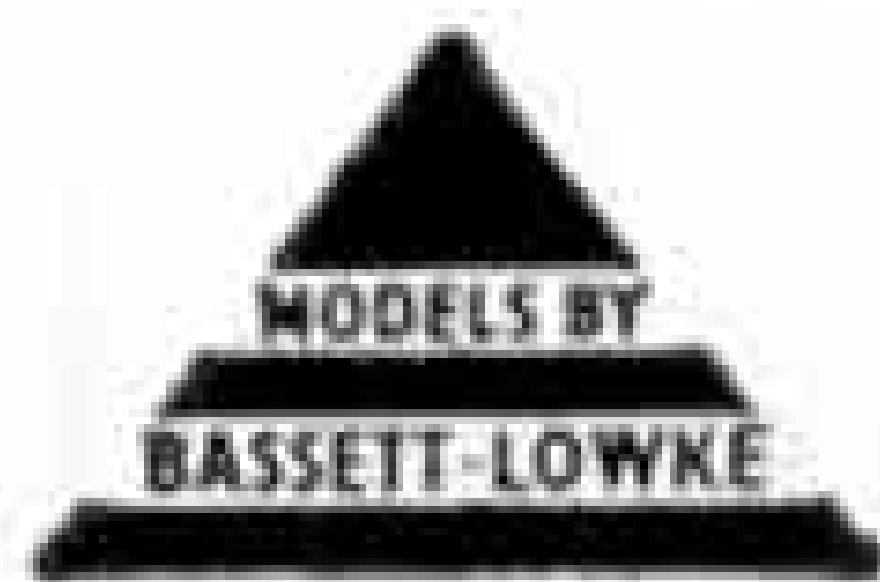
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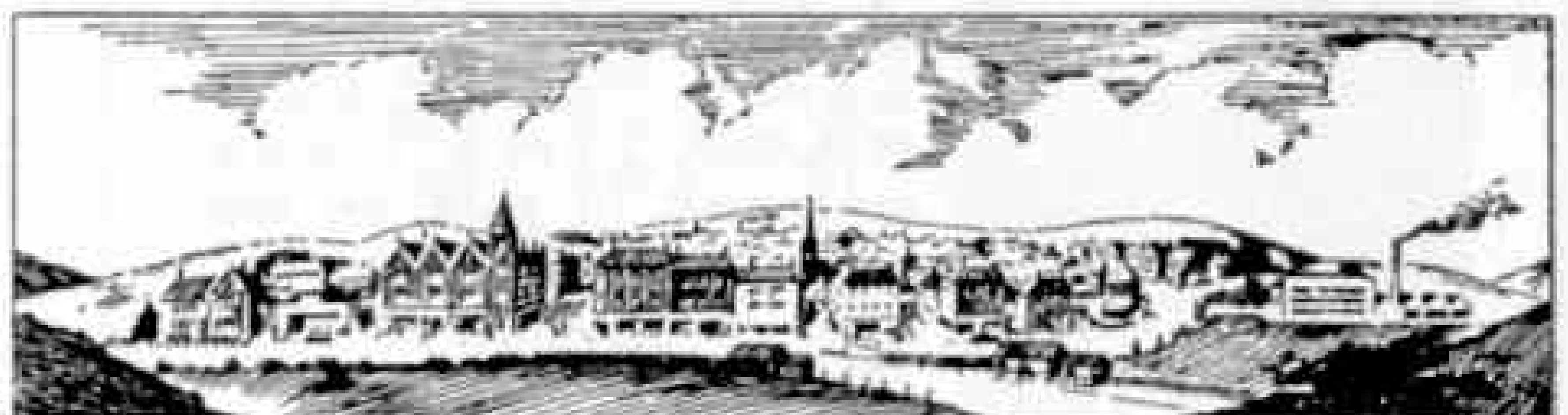
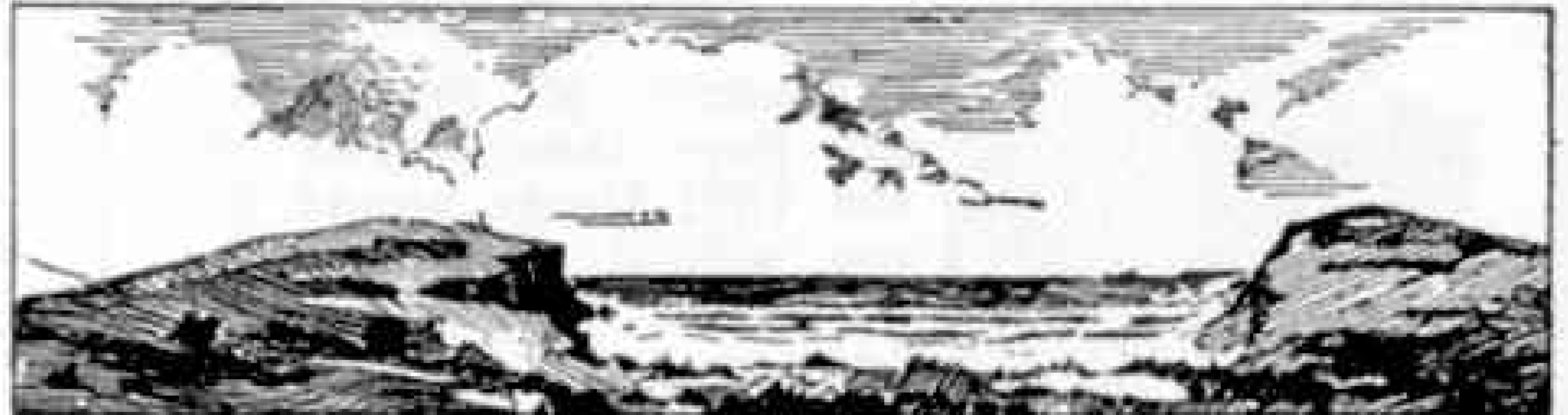
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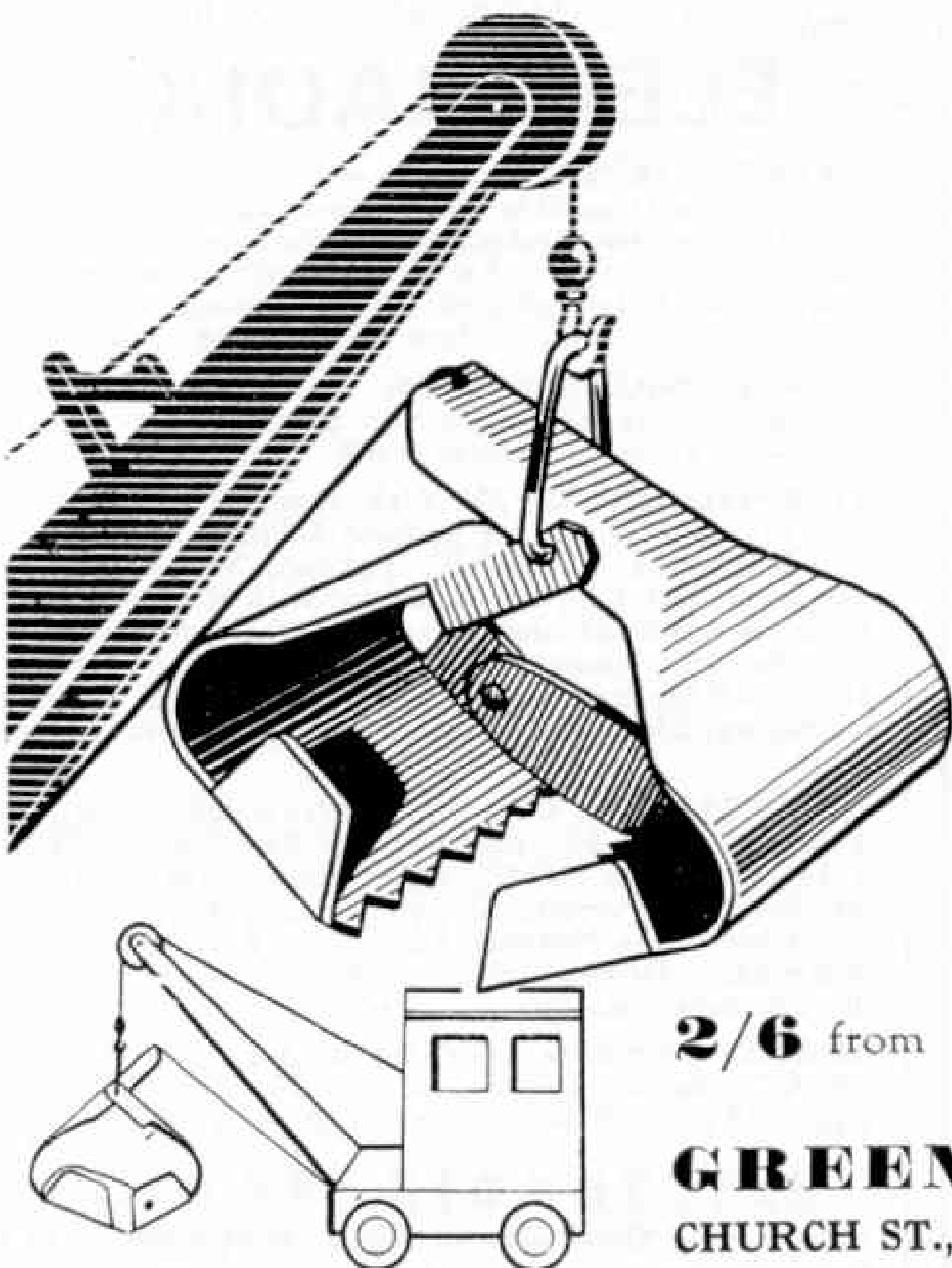
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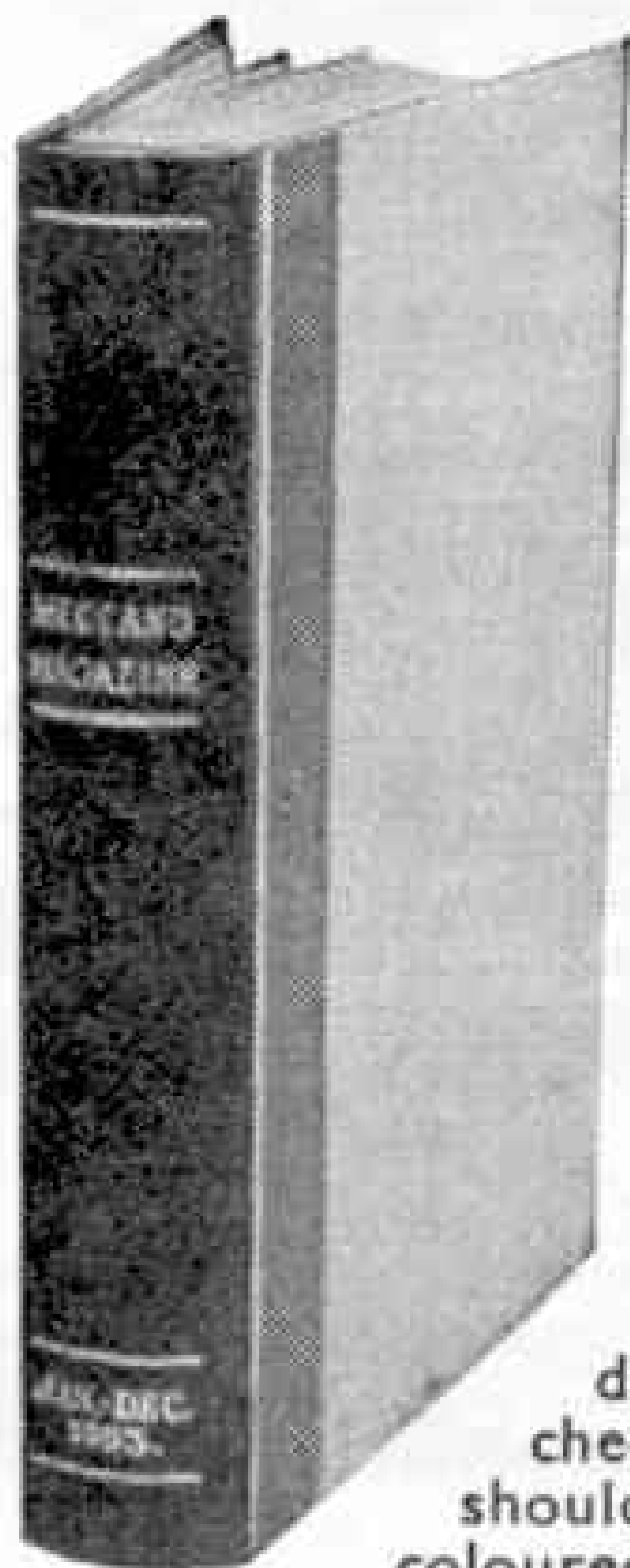
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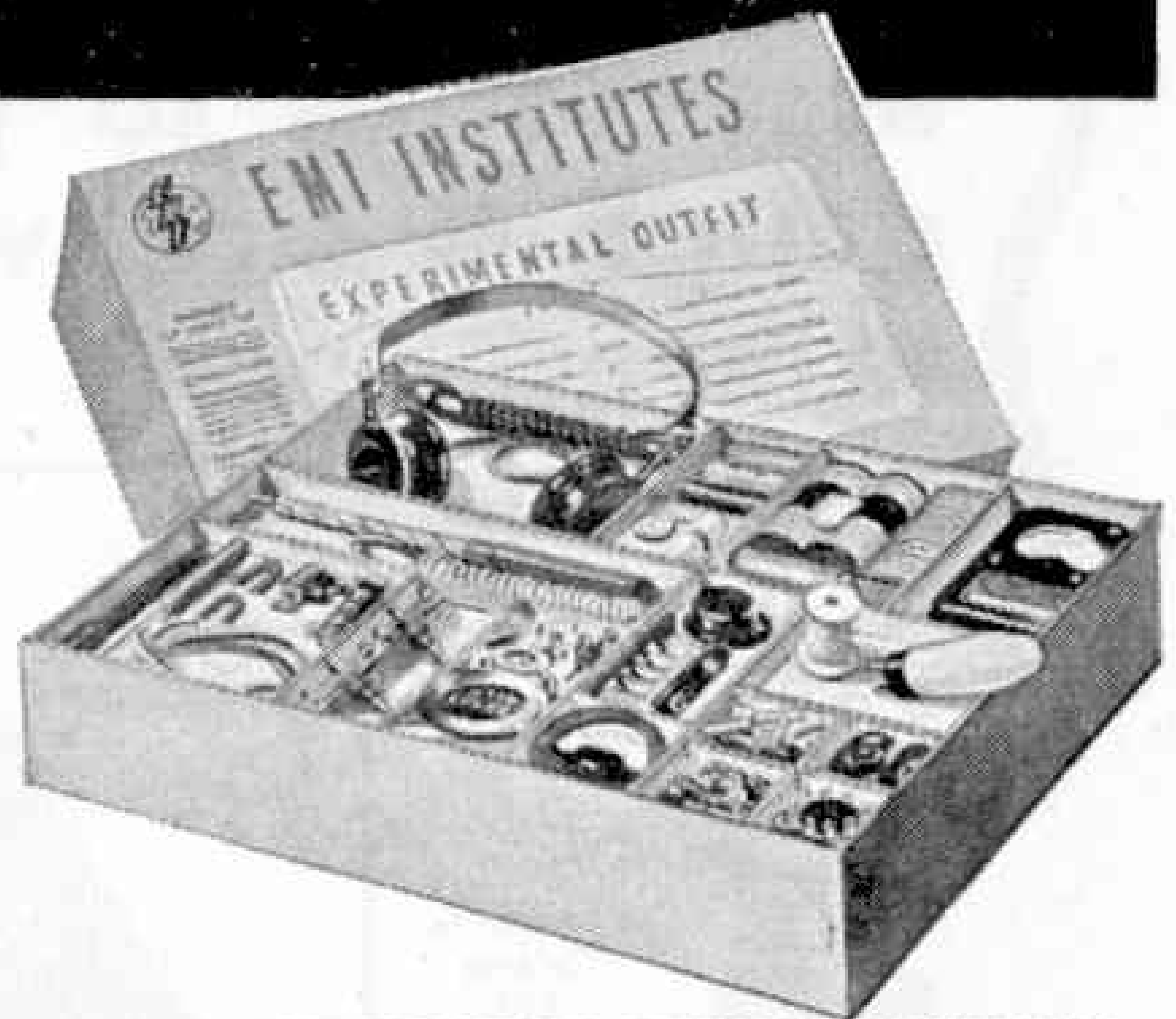
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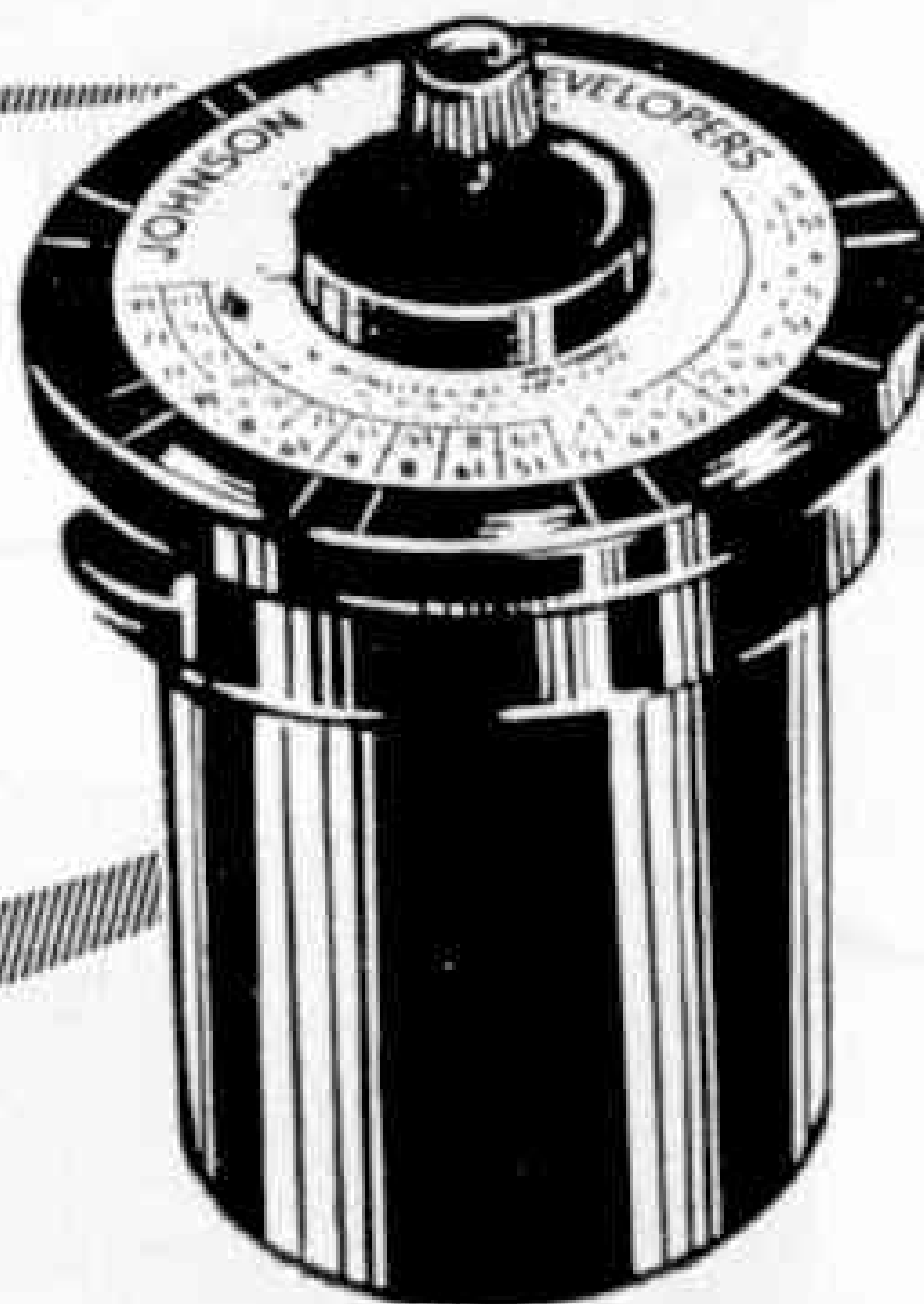
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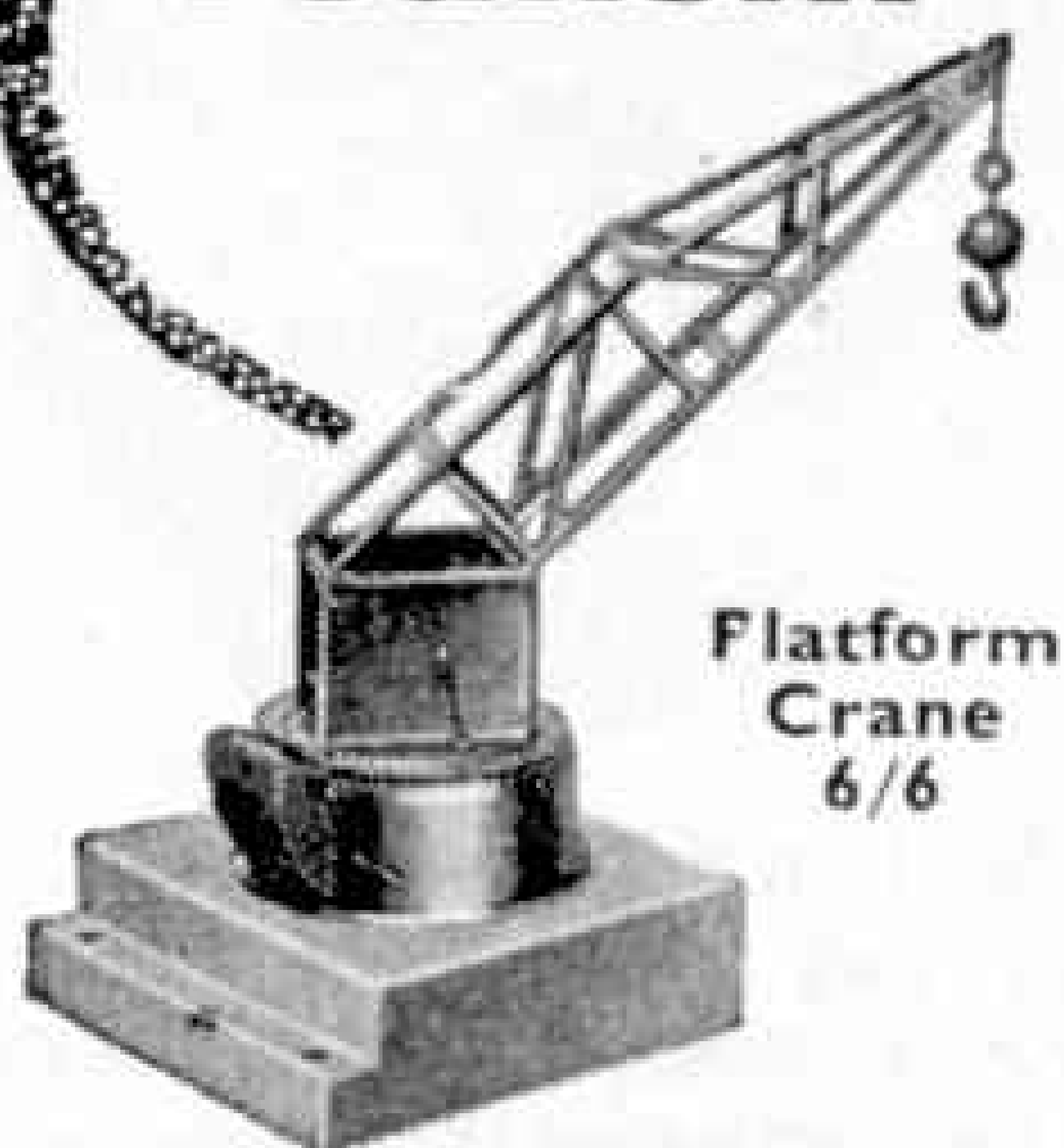
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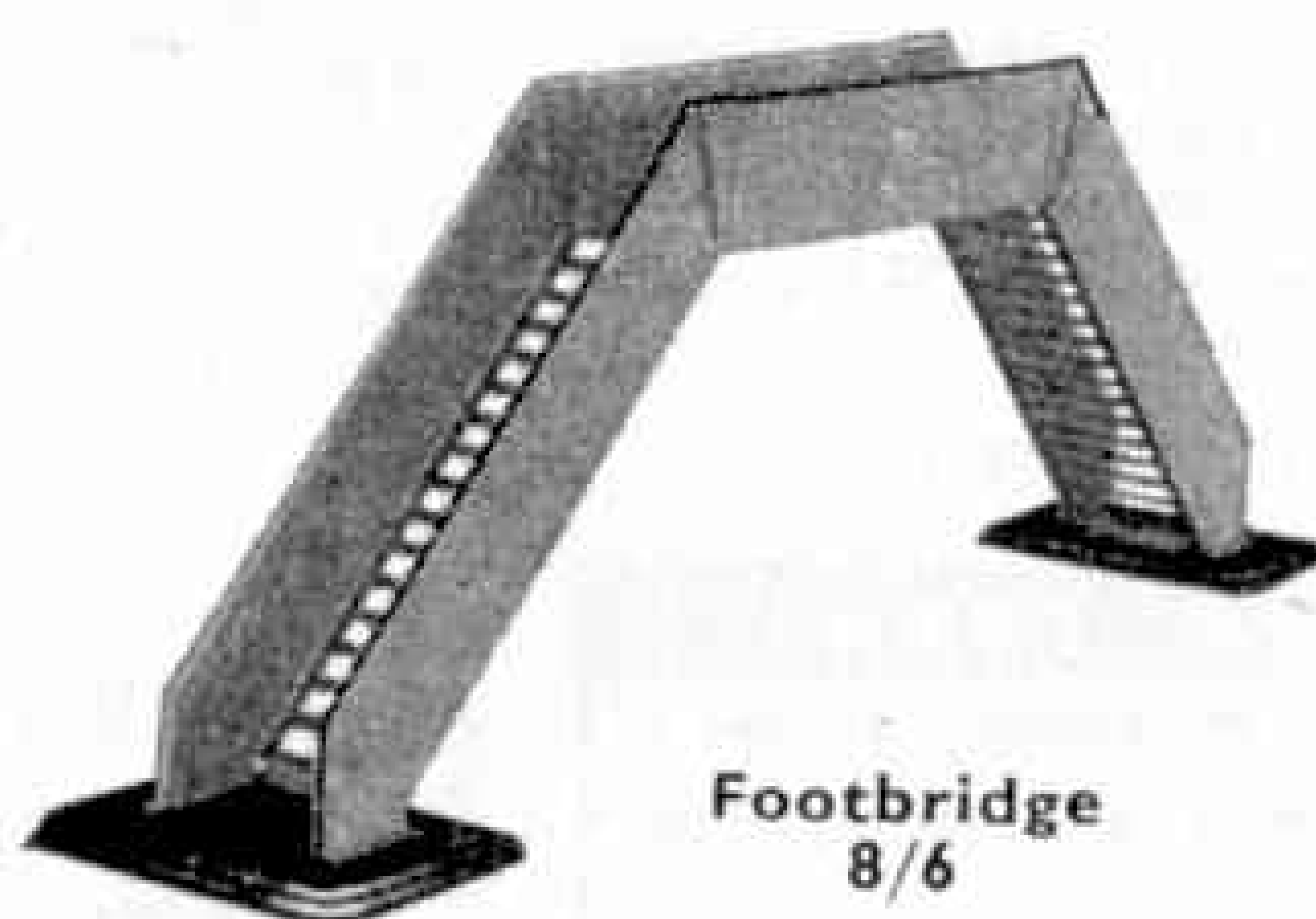
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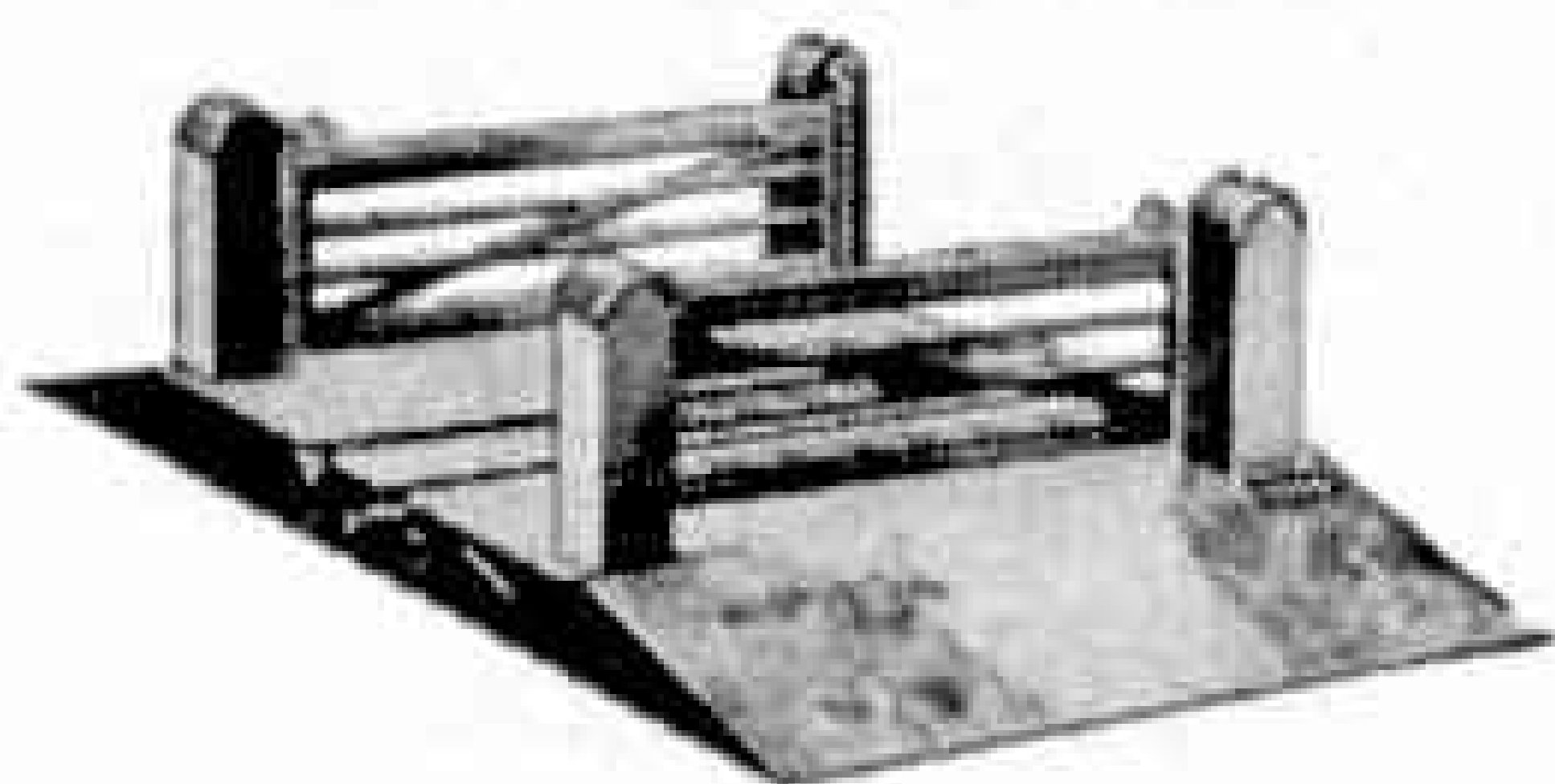
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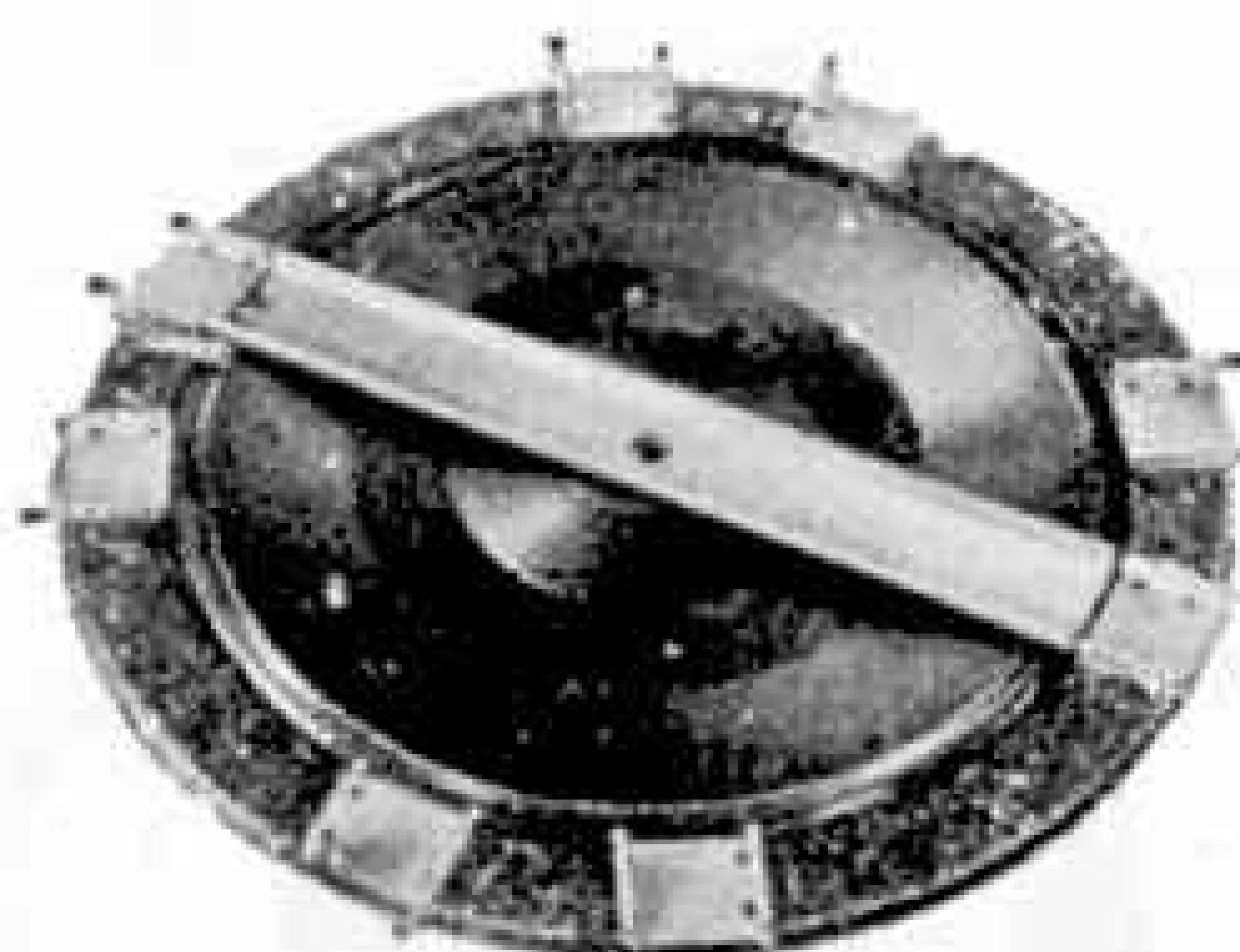
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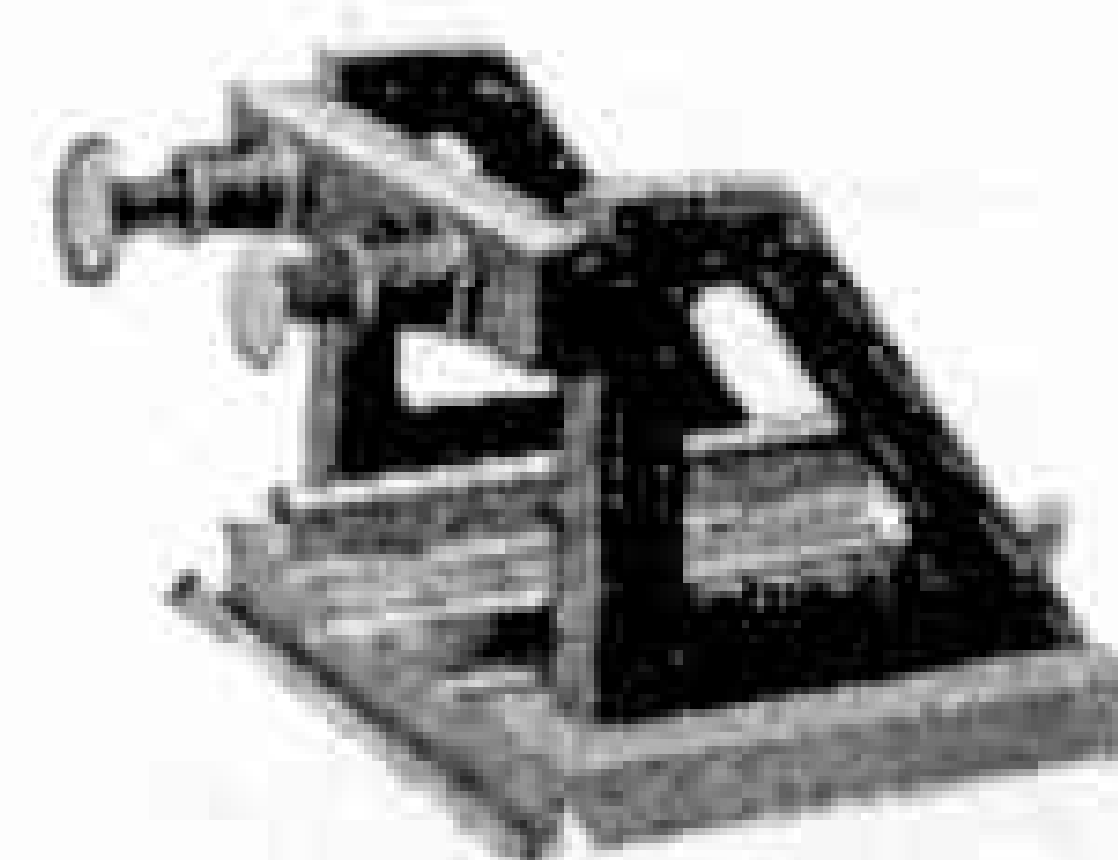
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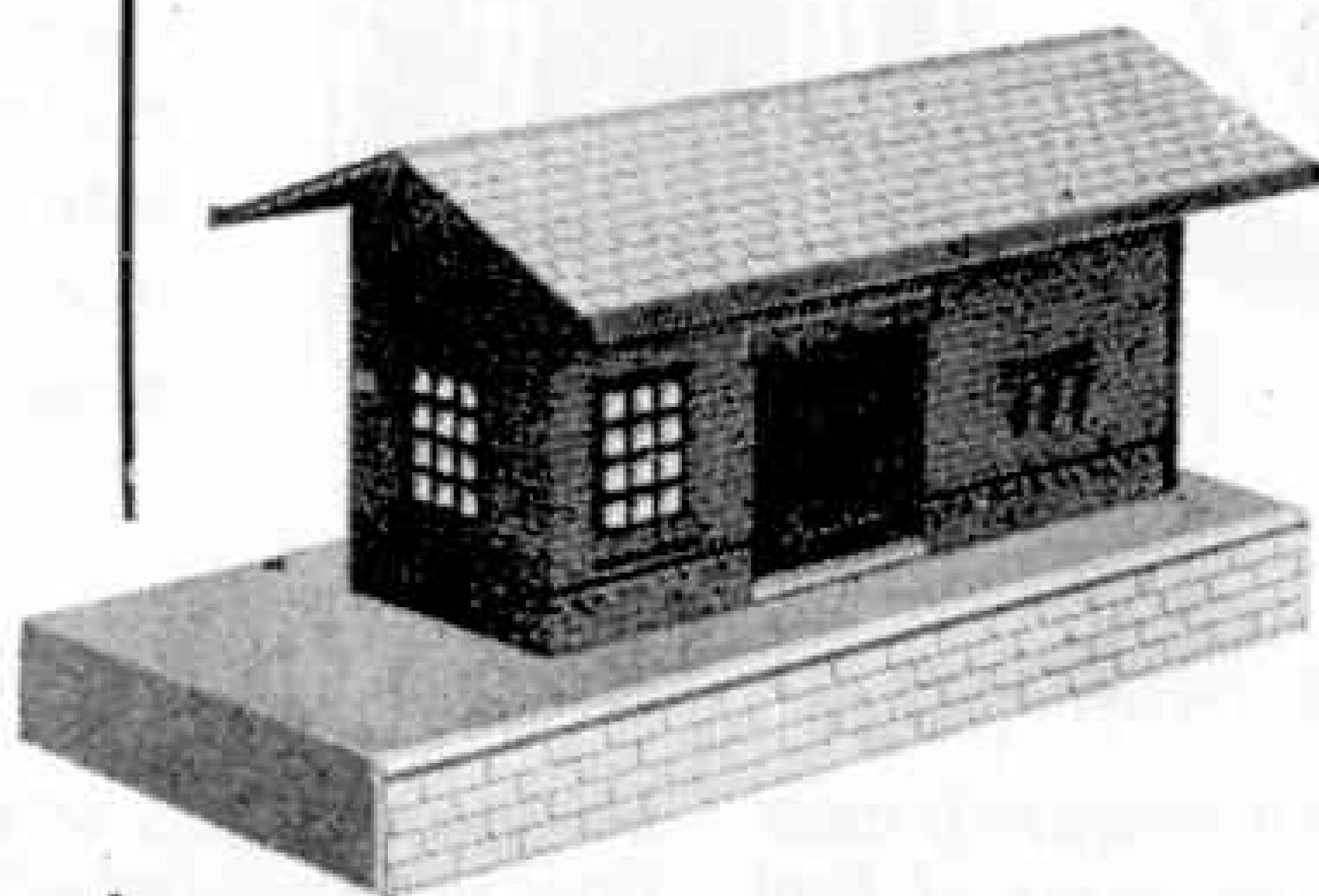
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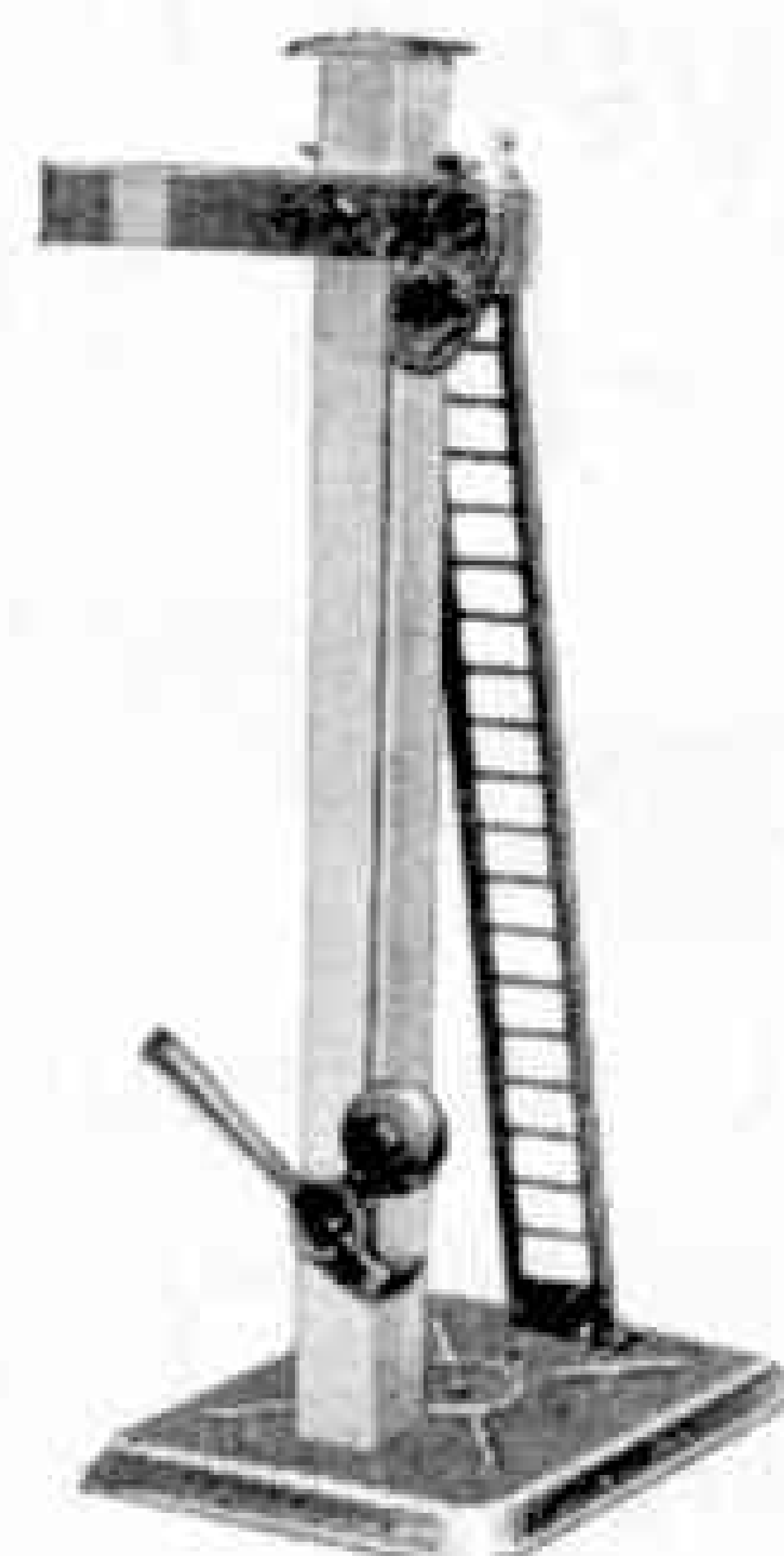
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Next Month: "FLYING IN A JET NIGHT FIGHTER." By J. W. R. Taylor

MECCANO

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January 1954

A Good Start For The New Year

I like the First Day of January, quite apart from the parties, presents and other pleasures that this landmark in the years always brings with it, because it is one of the days on which somehow we all seem to start a new sort of life. This applies to a Magazine such as the *M.M.* as well as to ourselves, and I always wonder what the coming months will bring for it, and how it will differ from the Magazines of previous years.

To this you will reply that I of all people should know something about this, and of course you are right. I can tell you that the Magazine will continue along its usual lines, and will have the bright appearance that it has gained in recent years, with contributions that will cover as attractively as possible a really wide variety of topics. So here now I wish a happy New Year to the Magazine, which is yours as well as mine, and also to everyone of its readers and supporters. I am sure that you too have the same wish for the *M.M.*

One thing that I hope to arrange for

at intervals during the year is the appearance of special issues, like the one

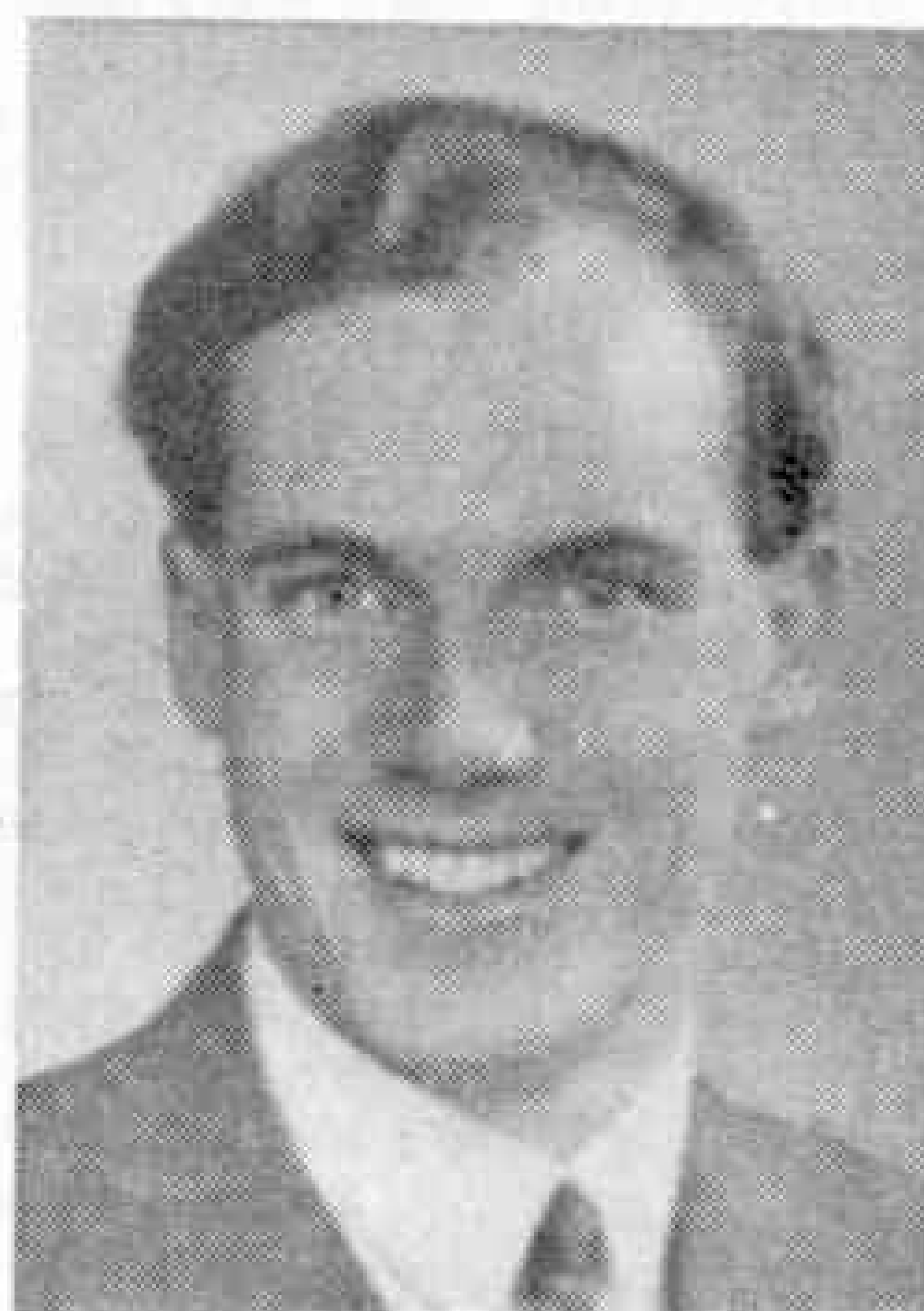
you are now reading. To me this issue is really interesting, because it is the first for many years to contain several articles dealing with different features of one subject, in this case the Monte Carlo Rally. Even if any of you are not very directly interested in motor rallies, I am sure you will appreciate the courage and determination of the famous drivers who have written the articles, and admire the way in which they try to foresee all difficulties

and to make preparations to meet them. I can tell you that all three were really delighted when I asked them to contribute to this issue of the *M.M.*

You must write and tell me what you think of this issue of the *M.M.* and of my scheme for introducing others during 1954. I have one planned

already for March, but I will tell you about this next month.

The Editor



The famous Monte Carlo Rally drivers who have written for *M.M.* readers the splendid special articles on this famous sporting event included in this issue. Above is Jack Reece, and below on the left Stirling Moss, on the right Ian Appleyard.



The Helix

The Tanker with an Overside Lift

THE fine vessel shown on the launching slipway on the cover of this month's *M.M.* is the *Helix*, one of 52 18,000-ton deadweight general purpose tankers now being built for the Shell and Associated Oil Companies. The 52 tankers of this class are to be constructed in various yards in Great Britain, Denmark and Holland, and 32 of them will be British-built. Most of them will have the normal steam turbine drive, but four are to be fitted with turbo-electric machinery and one will be powered by gas turbines, driving a single screw through electric motors.

This last tanker will be the first merchant ship to be driven entirely by gas turbines. Readers of the *M.M.* will recall that in April 1952 an article described the experimental installation of a gas turbine engine in the *Auris*, one of the vessels of the fleet of the Anglo-Saxon Petroleum Company, and that the trials made with that vessel proved successful. The new tanker will carry these trials further. It will be the last of six of the tankers that are to be built by Cammell Laird and Co. Ltd., Birkenhead, and its appearance in due course will be looked forward to with the

The vessel at the head of the page is the turbo-electric oil tanker *Helix*, which is seen on our cover on the launching ways on which she was built at the Wallsend yard of Swan, Hunter and Wigham Richardson Ltd. For our illustrations of this vessel and of the *Harpa*, and for the photograph on which our cover is based, we are indebted to the Shell Petroleum Company.

greatest interest. It is not expected to be completed before 1956.

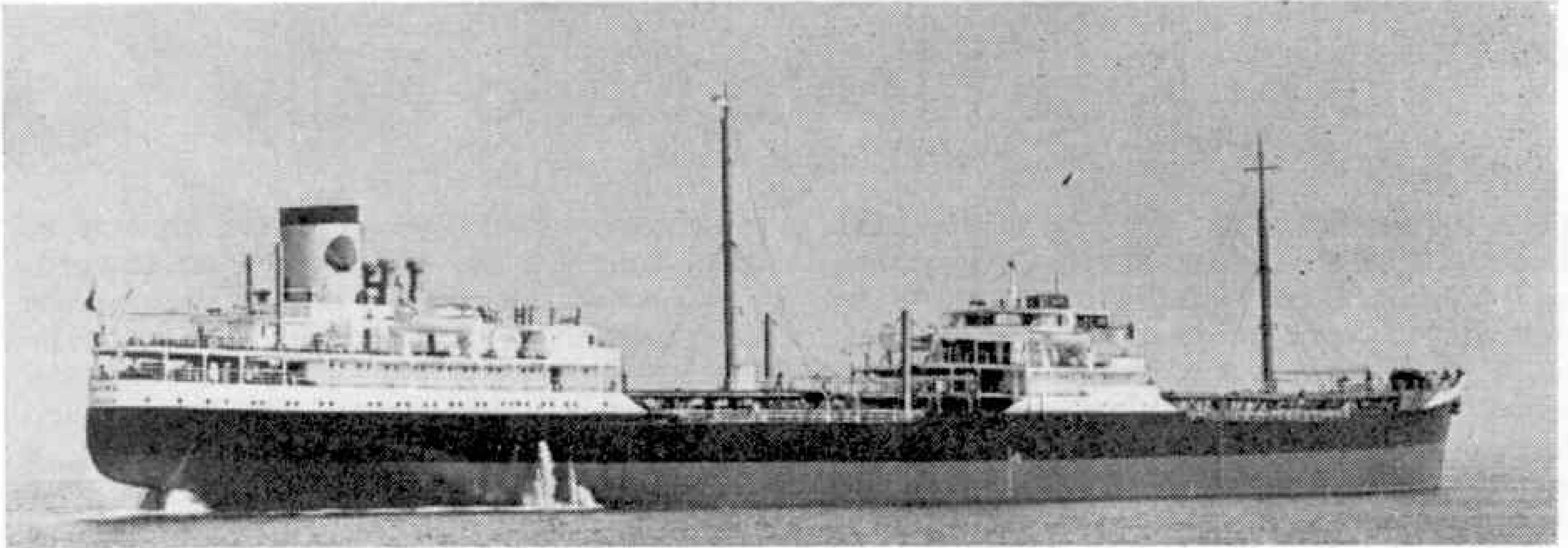
The first tanker of this new class to be delivered was the *Harpa*, seen in the upper illustration on the opposite page. She was launched from the yard of Harland and Wolff Ltd., Belfast, in January of last year, and is one of the 46 vessels to be powered with geared steam turbines. Her overall length is 555 ft., the moulded breadth 69 ft. 3 in.

and the loaded summer draft approximately 29 ft. 6 in. Her service speed is 14½ knots.

The *Helix*, the vessel shown on our cover, is seen afloat in the illustration at the head of this page. She was launched on 16th January last year from the yard of Swan, Hunter and Wigham Richardson Ltd.,

on the Tyne, and completed her trials in October of last year before being handed over to her owners for service. She has approximately the same dimensions as the *Harpa*, which indeed will be those of the class.

In design the *Helix* follows the accepted lines of modern oil tankers, with the machinery aft and the bridge structure amidships. She has 33 cargo tanks, in



The Harpa is one of the 52 general purpose tankers now being constructed for the Shell and Associated Oil Companies, the class to which the Helix also belongs. Our illustration shows her undergoing her trials in Belfast Lough.

11 sets of three tanks abreast. Welding has been used for practically the whole of the steel structure, and a special painting programme was followed to combat corrosion. In this the outside of the hull was flame-cleaned with oxy-acetylene burners, and the first coat of paint was applied while the plates were still warm. This was followed by specified coats of bituminous and oleo-resinous paints and by the anti-fouling composition.

The tanks are fitted with finned cast iron steam-heating coils that allow the cargo to be kept at a temperature of 140 deg. F.,

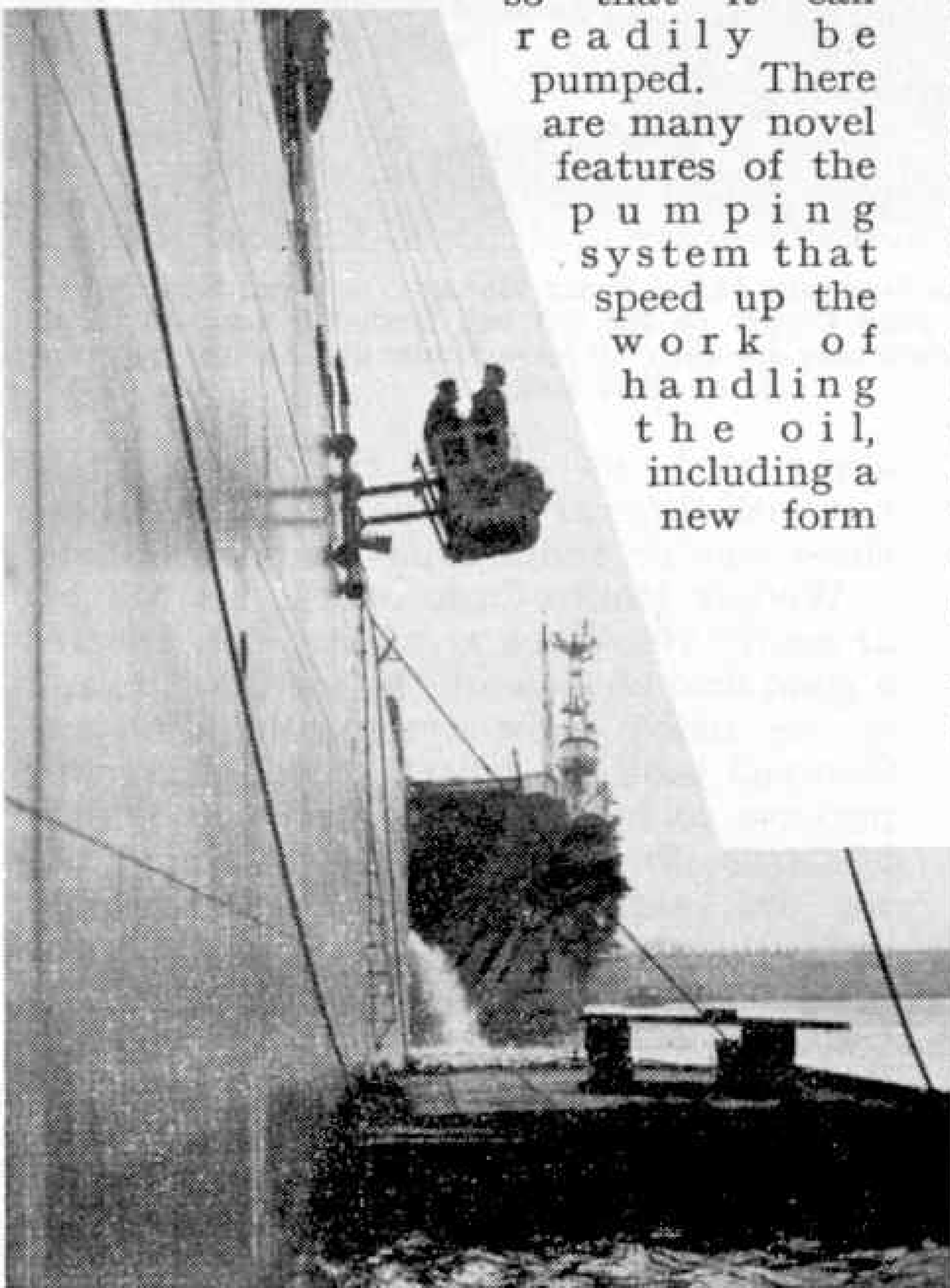
so that it can readily be pumped. There are many novel features of the pumping system that speed up the work of handling the oil, including a new form

of connection for hoses that can be fixed easily and quickly.

The *Helix* indeed is of special interest because she is partly an experimental ship. The vessels of the class are designed to be the safest yet built in the world, and the *Helix* is fitted with many new devices for the safety of her crew and stores, and to speed up the turn round at ports, that are likely to become standard in other ships of the class. One of these is a special device to prevent dangerous gases from reaching those parts of the vessel where naked lights are normally used, such as the galley, the boiler room and the smoke room. If by accident or mischance there is an escape of dangerous gases from the tanks, the air entering the mechanical ventilation system of these spaces is automatically tested for gas; and filters provide a margin of safety, allowing time for extinguishing boiler fires and other naked lights if the proportion of gas in the incoming air approaches danger point. Actually the risk of the presence of free petroleum vapour is reduced in these places by sealing them hermetically and maintaining pressure in them at slightly above that of the atmosphere.

Another interesting new feature is a pumping system by which one pump room handles the same number of grades of petroleum as was formerly handled by two. The most original feature of the *Helix*, however, is her electrically-operated overside lift, seen in the lower illustration on this page. This is intended to augment the normal facilities by which access to a ship is usually afforded, and is the first of its kind to be installed in any (Continued on page 12)

A novel way of going aboard a ship is provided by the overside lift of the *Helix*, the first of its kind to be installed in any vessel.



My First Monte Carlo Rally

By Stirling Moss

IN a few weeks time I shall be taking part in my third successive Monte Carlo Rally, and I hope there will be many more to follow. However many of these there may be, I shall always look back on my first effort with the greatest pleasure, for I was fortunate enough to win second place in the general classification, coming within four penalty marks of Sydney Allard, who was the winner in that year, 1952.

In saying that I came in second in my first Monte Carlo Rally I do not want to overlook the fact that I had two accomplices, John A. Cooper, of *The Autocar*, and Desmond Scannell, Secretary of the British Racing Drivers Club. The whole thing began when John Cooper and I came to the conclusion that it would be a good idea to enter the Rally together. As the third member of our team we invited Desmond Scannell, and were able to reap the benefit of his skill in organisation, a very necessary requirement in stern and long drawn out events such as that for which we had to prepare.

As you will all know, we were one of the units of the official Sunbeam-Talbot team, making the trip in a works-sponsored Sunbeam-Talbot 90. The Monte Carlo Rally is not just an ordinary event. Wherever the competitors start they have to travel over mountainous sections, and as the event is held in mid-winter it is almost certain every year that much of the driving will have to be carried out over ice and snow and in the most difficult conditions. It is great fun, but the most careful preparations are necessary, if only to avoid the unpleasant experience of finding oneself ditched without means of extraction, or of making some blunder that leads to an ignominious withdrawal!

At length the day came for us to make a start. We chose Monte Carlo itself for our starting point, and as we thought it would be a good idea to discover something of the route on our way to the starting

point, we assembled in Paris, and from there followed the Rally route southward.

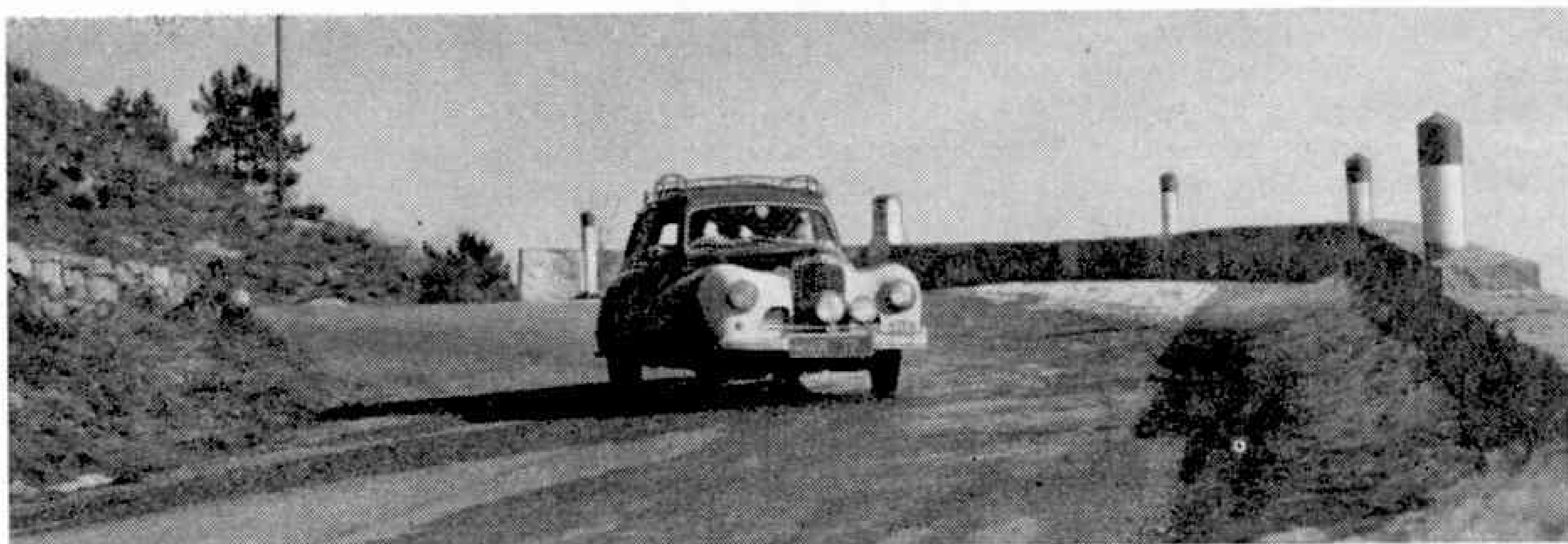
It was not long before we made acquaintance with one of the terrors of the Rally—snow. We were alternately heartened and discouraged, the latter when we managed to bury ourselves in a snowdrift, and the former when we were pulled out of it with surprising ease by a couple of oxen at the end of a length of chain. This episode put into our minds the advisability of taking a couple of oxen



Norman Garrad, the Sunbeam Talbot Team Manager, wishing Stirling Moss and his co-drivers, John Cooper on the left and Desmond Scannell on the right, bon voyage when they are about to leave Monte Carlo at the beginning of the 1953 Rally.

along with us during the Rally itself, but with three of us in the Sunbeam-Talbot there was no room even for one of them!

We left Monte Carlo on the Rally itself at nearly 10 o'clock at night. We expected a good deal of snow on the road northward, so we fitted snow tyres, and Desmond Scannell took the wheel, feeling extremely nervous, as he confessed later. I took over at Grasse for the tricky run to Digne, but we did not experience any particular difficulty and made good progress, John Cooper eventually taking us over the Croix de la Haute to Grenoble. The snow grew thicker, but the tyres stood up to their task and Geneva was reached without mishap. There we thought it safe to remove the snow tyres, but we found ice in plenty on the road as Desmond took



The Sunbeam Talbot on the Col de Braus during the final stages of last year's Rally, with Stirling Moss at the wheel.

us along to Berne, so we soon put them back and used them throughout the rest of the Rally.

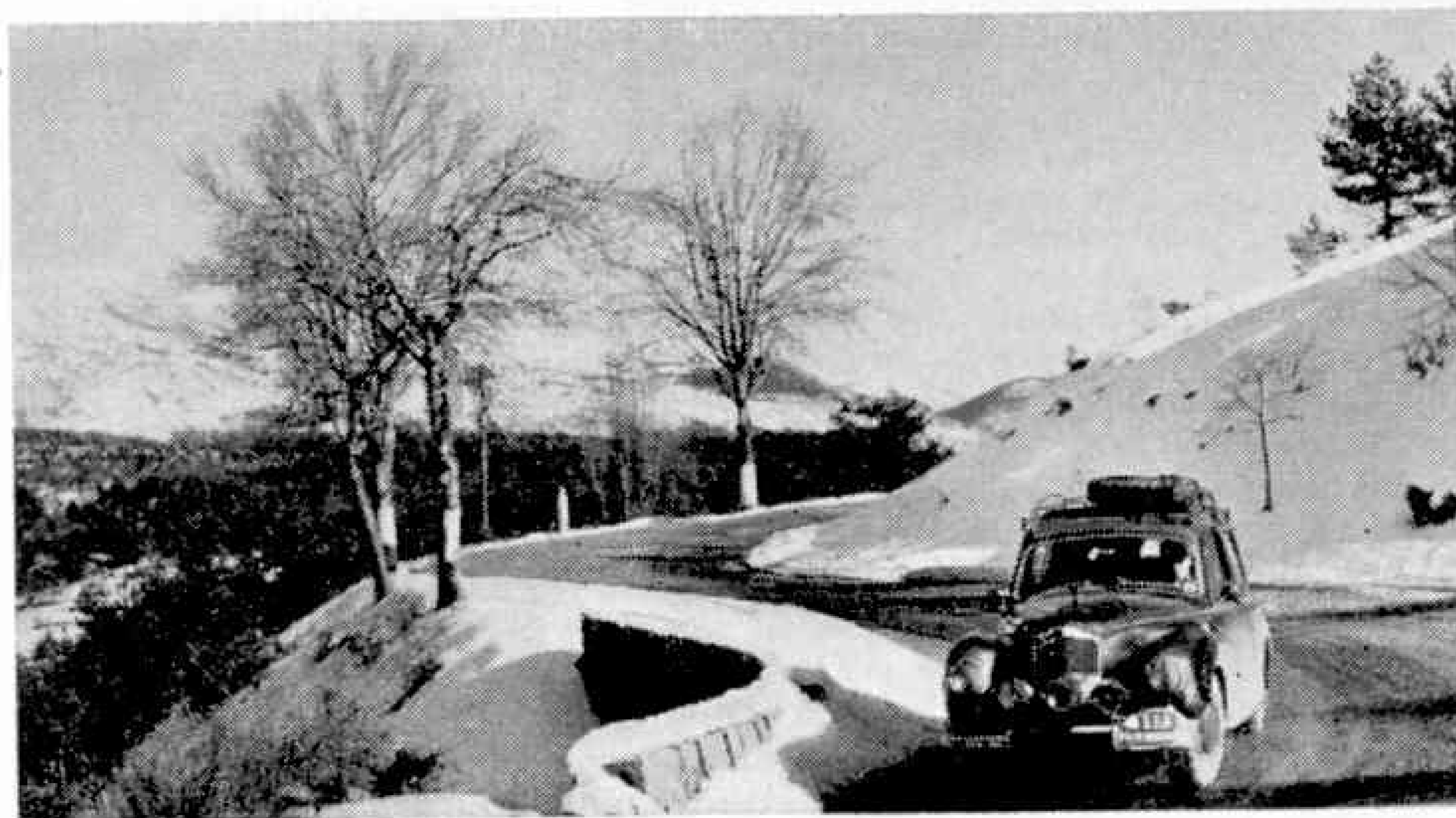
Unfortunately we reached Berne too late to allow me to visit my favourite restaurant and eat one of the fine *banane flambees* made there, a failing that really annoyed me, but after all we were there to cover the course at the prescribed speed and even my appetite had to give way to this paramount necessity. So on we went, each in turn driving, with the others resting in the back of the car, sleeping if possible but awakened at times by hitting the roof as the car bounced about on sections of road covered with ice and deeply rutted. The back of the car, by the way, had been curtained off with blackout paper. My companions alleged that this was done to prevent me from becoming too nervous when they were driving!

Northward we went through Luxembourg to Liege and Amsterdam, where we turned southward again. Actually the going was

now quite easy, as we went onward through Brussels and Rheims to Paris, and then to Bourges. We did not expect this good fortune to continue, for we were approaching the difficult central mountain region, where we could expect plenty of snow and ice and perhaps blizzards as well. And it didn't! John Cooper took over the wheel at Mont Lucon, with the idea of handing over to me at Le Puy, but a heavy storm was raging and when he reached the control at St. Flour we were well behind time. Stimulated perhaps by the fact that he had had the pleasure of seeing half a dozen unfortunate competitors ditched on one of the passes, he decided that the time had come to call upon me to take my share of this strenuous work and retired in my favour.

The road was narrow, with rutted ice below the snow, and in the dark, with snow falling and low cloud making it difficult to see more than 20 ft. or so ahead, we bumped and crashed our way on. Afterwards John and Desmond told me

that they had never been nervous throughout this fearsome night run, in spite of the fact that even on the snow and ice the speedometer at times, where



Arduous hill climbs are a feature of the Monte Carlo Rally, and here is a picture of the Sunbeam Talbot in bleak surroundings and in conditions that call for complete and accurate control.

there was a reasonably good straight stretch, actually registered 130 k.p.h., which is more than 75 m.p.h.

I shall always remember that night's drive. It is one thing to do high speed on a race track and quite another to race on a road surface such as that we encountered. On the racing track it is essential that the driver shall feel absolutely at home with his car; on ice the need for this is increased tenfold, whilst every movement must be instinctive—and just right. No grabbing at the steering wheel to swing the car round on bends! It must be stroked round, for any violent movement is almost certain to end in a ditch, or perhaps at the foot of a precipice in one of the many places where the road has been cut out of a cliff side.

When daylight came and the blizzard grew less troublesome, we had regained our lost time, and at Valence we learned that there were now only 20 of the 328 hopeful starters in the Rally who had not lost points. We were among them and realised that we had a chance of being in the

regularity test, carried out over a difficult circular mountain course beginning and ending at Monte Carlo. Our car was locked up in the official park, but we borrowed another one so that we could run round the course to pick out the difficult spots and work out our schedule of speeds. This practice was useful, but not as helpful as it might have been, as there was snow on the night before the test and many of our check points just disappeared from sight!

We started the actual test two minutes behind the enormous Daimler car in which Tommy Wisdom and two companions had come all the way from Lisbon without losing a mark, a car that on the face of it was suitable only for carrying seven passengers or so about town in comfort and dignity. I often think back with admiration of Wisdom's achievement with this large vehicle, which we caught up just before the first control on that difficult pass, the Col de Braus, with its steep gradients and many hairpin bends. Tommy sportingly pulled over so that we could get through

and when we reached the check we were within seconds of our scheduled time. We lost a few seconds on the pass, but hurtling through snow and slush we made these up and at the second fixed control we were exactly on schedule. We thought this was fine, and cheered ourselves gleefully, but it turned out later that the official chronometers there were in error, and this control was eliminated from the reckoning!

I was driving throughout this regularity test, and on the trip had one mishap, which fortunately had no serious consequences. This was at the entrance to a road tunnel, where there were two or three cars

clustered together on the side of the road and our Sunbeam slid off into a snowdrift. I tried to back out, but the rear wheels just spun round and round uselessly. Spectators rushed to our aid, however, and pushed us back on to the road. Desmond with admirable calm keeping careful count of the seconds we were losing.

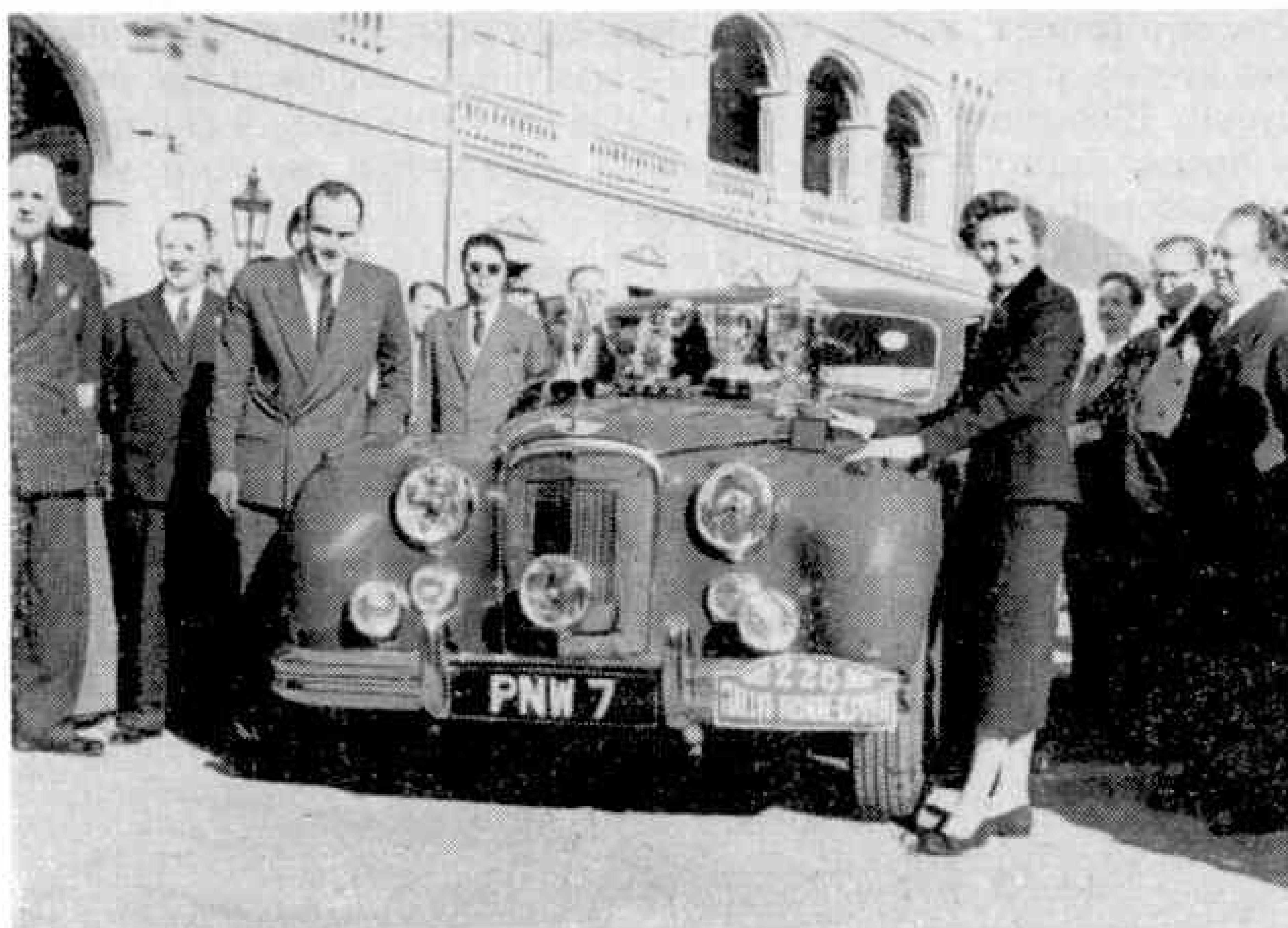
Then down the pass I went at tremendous speed, wondering where the secret check was that we knew was being imposed. If it were still ahead of us (Continued on page 22)



Tough going on the snow covered passes, with Stirling Moss and Desmond Scannell gazing tensely ahead.

running. We had now returned to the road that we had followed on the outward journey from Monte Carlo, running of course in the opposite direction. Over the passes between Digne and Grasse we did not find the surfaces too bad, and we kept ourselves as well up as possible. At Nice we stopped to check over the car and fill up with petrol for the last time, and then went on to Monte Carlo itself, one of only 16 competing teams to arrive unpenalised.

Everything now depended on the



IT may sound strange, but one's chances of success in the Monte Carlo Rally have usually been decided by the time one starts the event, and the results achieved by individual competitors usually bear a direct relation to the time they have spent in the preparations for the event beforehand. Many weeks of hard work on both the car and the maps is far more important than "do or die" efforts during the course of the Rally itself.

The choice of the make of car to drive is obviously very important, but is usually decided by the type owned, and hence the first major problem to settle is that of the crew. In this respect I have been extremely lucky, as for the last four seasons I have always had my wife as co-driver. Being cooped up in a car with someone continuously for perhaps seventy-two hours will strain even the closest of friendships, and it is essential that one should have mutual confidence in each other's capabilities both in the navigational and driving rôles. It is quite impossible to sleep and get adequate rest if one is constantly being frightened by the performance of the driver.

The crew having been chosen, work on the car can begin. But first one must check that it complies in all respects with the regulations. These usually state that

the car must be a production model of which at least 500 or even 1,000 have been made in the previous year, but sometimes modifications are allowed for the particular conditions of any rally. Special points requiring to be checked always include the weight of the car, whether it has open or closed bodywork, the internal body dimensions, the year of manufacture, and even perhaps such a small thing as the area of the driving mirror, for which there is a minimum laid down.

The number of accessories that can be fitted to the car is not limited by the organisers, which is rather a pity as it is probably the most difficult thing of all to decide. Obvious things required are a good heater, some way of defrosting the

windscreen, fog lamps, map lights and a folding seat to enable the navigator to snatch some sleep. But there are

many other odds and ends that can be added and which are useful, all of which add considerably to the weight of the car, however, and put a terrible strain on the battery. One has therefore to be quite ruthless about the choice of these gadgets, and restrict them only to those things that are quite essential to the good running of the car.

One very difficult decision to make is that between the use of chains and the new type of special snow tyre that has recently been developed. In 1952 we chose to use chains and bitterly regretted the decision. After leaving a snow-covered pass we came on to a stretch of hard road and wore the chains right through. Finally they came off and got wrapped round the brake drums, causing us a considerable delay. Last year we concentrated on snow tyres, and found them much better at high speed so long as the tyre pressures were kept very low in order to give maximum grip.

Preparing for the Monte Carlo Rally

By Ian Appleyard

Ian and Pat Appleyard, with the Jaguar car in which they won second place in the 1953 Monte Carlo Rally, are seen in the illustration at the head of this page. The car, its drivers and their trophies are the centre of an admiring crowd.

Finally we come to the extra equipment and spare parts carried. These are limited to items fitted reasonably quickly like the coil, sparking plugs, water hoses, lamp bulbs and fuses, together with an assortment of copper wire, insulating tape and strong rubber bands for fastening things on that may fall off! A hacksaw may sound a destructive tool to carry, but it can be mighty useful for removing a jammed nut or cutting off some obstruction to a wheel after a bump. Other essential equipment includes

spades, unditching gear and a tow rope, and of course ensuring that there is somewhere strong enough on the car to fasten the tow-rope to in case one ends up in a ditch in the middle of the night.

So much for the car. The navigational side of the preparations are equally important. Long hours of work with maps before the event will certainly save precious minutes at doubtful places during the rally itself, and calculations made in the quiet of one's home are much more likely to be correct than frenzied last minute arithmetic en route. We try to condense all the

navigational information

into one loose leaf book, so that one side of each opening has pages cut from the maps, with the route clearly marked on them, and on the opposite page are all the details with regard to mileage,

The Appleyards on the Col de Braus in the regularity test that completed the Monte Carlo Rally of last year.



This splendid picture of the Appleyards indeed shows well the grey painted area on the front of the car that marks it as an entry in the Monte Carlo Rally.



times of arrival at all the controls, filling stations and so on. A really accurate speedometer calibrated for the continent in kilometres and recording the distance accurately, coupled with at least two good stop watches and suitable lighting for use at night, complete the armoury of the navigator.

So much for the jobs of preparing the car for its task and preparing for the navigation. One now comes to the event itself, and here the comfort of the crew is all important. A really comfortable bucket seat is best for the driver, and for the navigator a seat which can be folded flat to enable periods of rest to be snatched

when the roads are fairly simple. So far as food is concerned, it is usually possible to snatch hasty snacks at some of the controls, but we always carry some emergency rations of cheese, chocolate, raisins, and coffee, etc., and also find that

glucose tablets taken at the right time can add considerably to one's strength towards the end of a long event.

I think I should mention the rally driver's nightmare—falling asleep at the wheel. There is nothing more frightening than feeling oneself beginning to nod when in charge of a car, and my wife and I have an inflexible rule that as soon as we begin to feel at all sleepy we immediately hand over the driving. In this way we find that even if we can only get a rest for a few minutes the tiredness quite soon passes, and in this way, bysnatching cat naps throughout a rally, we find it quite possible for two people to keep going for seventy-two hours.

With all these preparations to think of, it is quite easy to overlook some of the vital documents required for an event on the continent. These include such things as competition licences, special insurance cover for the car, foreign currency for the many different countries through which the rally may pass, shipping arrangements, passports and car documents, and one thing which we forgot until the very last moment only a month or so ago in the Lisbon Rally—visas, if by any chance the trial is going into Spain or Portugal.

The last stage of the preparations is usually a practice run over the most difficult parts of the course about two weeks before the actual start. This also enables one to practice the regularity-speed test usually held in the snowy mountains behind Monte Carlo. During this test competitors have to cover consecutive sections of road at exact average speeds set by the organisers and marks are awarded based on one's regularity. Last year we had to make over 700 calculations to produce eleven different sets of figures in

order to be prepared for any eventuality that could possibly occur during this difficult test.

So eventually one comes to the start of the Rally, in which the weather is always a deciding factor. In 1952, because of terrible snowstorms, only a handful of competitors got through to the finish without losing marks and so the final test only sorted out the placings of

these few competitors. Last year, however, the position was completely reversed, for the weather was fairly mild and the majority of drivers got through unpenalised. Because of this the final regularity test last year had a decisive effect on the final results and there was a large



Rallies are not won by just getting into a car and driving off. Careful preparation is necessary, and here Ian Appleyard and a mechanic are seen checking over the "stores." Photograph by courtesy of the "News Chronicle."

element of luck involved in the timing of the cars through the various sections. For instance, the first dozen or so cars were only separated by a few seconds in the final results and we ourselves missed first place by a matter of only one second—a very narrow margin after a drive of 2,000 miles!

This year the event has been made tougher than ever with a regularity section on the final stages of the road section leading into Monte Carlo before the finish, and finally a real race round the houses at the end to sort out the winner. Unfortunately my wife and I cannot go this year, and so towards the end of January, as we go to bed in a nice warm house, we will be thinking with mixed feelings of our friends speeding through the snowy night towards Monte Carlo. Particularly we will remember our collaborators in this special issue of the *M.M.*, Stirling Moss and his co-drivers, and Jack and Peter Reece, with whom will go our best wishes for victory.

The Monte in a Ford Anglia

A Little Car for a Big Occasion

By Jack Reece

MY cousin and co-driver Peter and myself took part in the Monte Carlo Rallies in 1949 and 1950 in a big 30 h.p. Ford Pilot. What happened then taught us that we had neither the experience nor the skill to cope with the International stars of this great winter motoring event. We were both determined to do much better than had been our lot in those early efforts, but how was this to be done?

gained an enormous amount of experience of ice driving and general winter motoring and, what is more, we learned just how remarkable is the spirit of comradeship that animates the drivers who enter the Monte Carlo Rally whether one be driving the latest luxury model or, as we were, the humblest 8 h.p. model.

How best to convey something of the true sporting spirit of the Rally is the task your Editor has set me. Here to my mind is the classic example. It happened in 1952, when we had the good fortune to be drawn first away from Glasgow, the starting point of the British contingent. We were numbered 74, and behind us were 108 other British drivers.



Jack and Peter Reece with their Ford Anglia in Monte Carlo at the end of the Rally of January 1952. The story of their trip in this car, the smallest taking part in the event, is told in the accompanying article by Jack Reece.

After some thought I found what I believed was the solution and accordingly I rather horrified Peter prior to the 1951 Rally by casually informing him "No comfort this year. We'll do it the hard way and learn from the bottom—we're taking an 8 h.p. Ford!"

After getting over his initial shock Peter asked if "any Englishmen had ever got an 8 h.p. car to Monte on time before." Cautiously omitting to tell him that no one had even tried I just said "No," and our effort was on.

The history of the Rally and the record book now show that Peter and I have got an 8 h.p. into Monte Carlo on time twice in three attempts. During those three attempts we both learned a lot. We

Right away the bigger cars, cruising at 70-75 m.p.h., passed us with monotonous regularity out of each check point, as we were restricted to 55 m.p.h., with occasional bursts of 60, which was all that we dare let our diminutive engine do for us. This went on until we reached Bourges, south of Paris, a small town at the foot of the great French Central Massif, a very difficult mountain section that has to be crossed on the way to Monte Carlo. On leaving Bourges this seemingly eternal game of letting the big boys pass changed. It was the terrible conditions we were now enduring that were responsible for this, for on sheet ice and in a blizzard a small car comes into its own. Our maximum speed now had become the maximum for practically all but the really great ice drivers, and Peter and I remembered that one famous international Rallyist had said "It's no good having a potential 95 m.p.h. under your foot if that foot says 60 m.p.h. is the limit!"

Undoubtedly the conditions at the time favoured a light and compact small powered car, for the rising and falling slopes of the mountain roads were covered by a glistening coat of black ice, which proved a great handicap to the drivers of the bigger-engined Rally cars. Some of these, with their special equipment, weighed two tons or more!

It was about an hour after leaving Bourges that we both began to notice the remarkable fact that no one was passing us. What we did not know was that behind us the blizzard had stopped, so that instead of the carpet of freshly laid snow that we travelled on, those who were following us were still proceeding gingerly over a black and evil mass of shining ice, with fear of sliding and slipping out of control and even into disaster, ever in their minds.

Into the tiny village of St. Cloud we ran, a quarter of an hour ahead of time, and were off again without wasting a second. Now we were heading for Clermont Ferrand, one of the most notorious of all Monte time checks, buried as it is half way up the sides of the Massif. Soon we

were only half an hour from this check and still no one had passed us! We had twenty minutes in hand now, and we had begun to get some inkling of what was happening behind us. We were indeed experiencing one of those fantastic strokes



The Reeces' Ford Anglia on a mountain section in the 1952 Monte Carlo Rally, where they drove for hours in difficult conditions in the wake of a snowstorm.

of luck that the Monte Carlo Rally occasionally serves out. Owing to the accident of our having a low number, a stroke of real good fortune, we were chasing the tail of a blizzard in which the snow covering of the road gave us the maximum grip on the ice, and that fact that we were at the tail end, and not in the blizzard itself, gave us that other blessing—visibility.

Needless to say, we were greatly bucked. We pictured ourselves, the pride of the English contingent, arriving at Monte Carlo with time in hand on a Rally in which conditions were really tough, and I must admit we were really enjoying the prospect. Then Fate struck us a shrewd blow, for our little car came to a sudden halt!

The trouble was obviously failure of the mechanical petrol pump. It was forbidden that year to fit another petrol pump, so that we had no choice but to change it.



In the 1953 Rally Jack and Peter Reece again entered a Ford Anglia, which had the encouraging registration sign OKA 1. Here they are seen receiving their prize at the end of the Rally.

The spot our car had chosen for this fateful stop was an awkward one, on a narrow steep downhill mountain road barely two cars wide. As we worked feverishly to change the pump all our hard-earned time slipped away, until at length the flare of approaching headlamps warned us of the approach of the rest of the English contingent. Peter ran up the road to warn them of our presence; but in spite of that, for me, lying under the car, the thought of those other English entries passing on an ice-covered downhill slope with only inches to spare was frightening.

As our car stood there motionless, car after car slithered and skidded to a halt, their drivers carefully picking their way past our forlorn little machine and stopping to speak to us, in spite of the premium on time, and the desperate urgency to recover lost time. I am proud to say that the occupants of all cars with an English crew asked the same question "Can we help?" To all of them of course I gave the same reply "Thanks, no, carry on."

How comforting it was to know that right at the most intense moment of the most critical section of the Rally the Spirit of Rally Motoring exerted itself on behalf of a humble 8 h.p. Ford, and allowed drivers of such international fame as Sydney Allard himself, the eventual winner that year, A. G. Imhof, a practised rally and trials veteran, Norman Garrad, the tough and efficient Chief of the Sunbeam-Talbot team, Ian Appleyard, the famous rally driver and Alpine expert, and a host of others to waste those ever valuable minutes on our behalf. As long as that spirit exists, Peter and I will continue to enjoy International Rallying,

especially the "daddy" of them all, the Monte Carlo.

This year Peter and I are trying our luck for the sixth time, this time forsaking our little Anglia in favour of the luxury of a big Ford Zephyr, the make of car that won last year's Rally. We both know that the experience we have gained "the hard way" in the little Anglia will serve us in good stead, and can only hope that the famous—or infamous—"luck of the Monte" will smile on us.



The Reeces will drive anything anywhere. No doubt they would be prepared to enter this vintage Wolesley in the Monte Carlo Rally if it were eligible.

But we are not content to leave our progress to luck. Readers can rest assured that in the matter of preparation and training nothing is being left to chance. Peter and I have already tried out our Zephyr in the Lisbon Rally, in October last. This was a tough affair, but we finished in fifth place, and learned to know what our car will do. Perhaps this year will see us with one of the plums of International Rallying—a place in the top six in the Monte Carlo. We know that, like Stirling Moss, we shall have the good wishes of our fellow *M.M.* readers behind us.

The Helix—(Continued from page 3)

vessel. Those going aboard the *Helix*, or coming ashore from her, do not have to face the hazard of companion ladders, or of gangways sloping at various and often steep angles, and on arrival at a port the lift is ready for immediate use. It can be used for hoisting and lowering both stores

and ships personnel, but there is one passenger it will discourage—the rat! For this reason the lift is specially favoured by the medical officers of ports.

This revolutionary introduction is made of a light aluminium alloy. It can carry either six men or ten hundredweight of stores and is not affected by the list or trim of the vessel.

The Story of the Monte

J. Dewar McLintock Reviews the History and Official Requirements of the Famous Rally

IT is mid-January 1927. At Monte Carlo, in the romantic little principality of Monaco, the strained-looking but still keen-eyed driver of an Amilcar, who has driven night and day under dreadful conditions from Koenigsberg in East Prussia, turns to his four passengers and says "That is that, then. There is a chance we are in the first six, perhaps" He is more than right, for the results shortly afterwards show that this driver, M. Lefebvre-Despeaux, has urged his modest 1100 c.c. machine along to such good effect that he is outright winner of the Monte Carlo Rally—the sixth in the series.

This was a noteworthy win, not so much because the five occupants of the car had

was significant that in 1927-8 a number of protests were made to the effect that some of the small cars had an attendant car behind them, with helpers, spares and baggage! It is most doubtful if this applied to the winner, as there would have been too great an outcry, but in those days there were evidently a sufficient number of loopholes in the regulations to permit that kind of thing, so that quite a number of small cars were getting places. However, no small car has won the event since 1930, although many medium-capacity and baby cars have greatly distinguished themselves in their particular classes.

It is interesting to note that in the 1927 Rally, which I choose as being typical of the "middle ages" of this historic event,

there were 52 starters and 45 finishers. There were eight from Koenigsberg, seven of whom finished, but the eighth, according to an *Autocar* report of that period, "stopped by reason of a collision with a policeman in Germany." It had been thought that the route from East Prussia would be the most difficult, but in fact the competitors from Gibraltar had the greatest difficulty, what with snow in the Spanish mountains and deep floods in France. The greatest distance was travelled by Prince Racovitz (Steyr) who came from

Bucharest. Mrs. V. A. Bruce (A.C.) whose husband, the Hon. V. A. Bruce, had won in a similar car the previous year, was sixth in the rally, and fastest in her class in a hill climb which followed it.

Today, the Monte is every bit as severe a test of man and machine as it was in the early days, for while cars have changed and improved almost out of recognition, the required overall average, at 31½ m.p.h. is



Monte Carlo Rally competitors (Jack and Peter Reece) in a Ford Anglia driving through Paris, where the passage of cars taking part in the Rally always arouses the greatest excitement. Arc de Triomphe in the background.

covered 1,638 miles at an all-in average speed of 21.7 m.p.h. under very severe conditions, but because the car was a small one, and this had not previously been considered a game for light cars.

The first Monte Carlo Rally was in 1911, and in the early years of the event few light cars figured in the results. What had happened to make these bantams suddenly challenge their bigger brothers? Possibly it

a great deal higher. Think what it means three days and nights of motoring, with hardly an instant's relaxation—no margin for error in map-reading on the part of the navigator—no escaping the close record on one's progress kept by the officials—road and weather conditions almost unpredictable from hour to hour and mile to mile. As one of my colleagues has put it, "It is the average motorist's winter journey magnified to grotesque proportions, with the distance far greater, the ice and snow more terrible and the average speed to be maintained incomparably higher" All this, and the knowledge that the earlier stages of the great event lead only to the really searching test, near the end, in mountainous country!

Let us now look at the official regulations for this year's Rally, to be held from 18th to 25th January. These actually make a 50-page booklet, but I will try to summarise the more interesting points.

The event is open only to "standard touring cars"—a somewhat archaic term, I agree—produced after 31st December, 1949. A "standard touring car" means a model that has been manufactured over a period of twelve consecutive months, and of which at least 1,000 have been built if under 2,000 c.c. engine capacity, at least 500 if over that capacity. It must, in fact, be a catalogued

A Lancia Aprilia that had started the Rally from Umea, in the north of Sweden, on the winding ascent of the Col de Leques, one of the worst passes of the final test section in the 1938 Rally.

model that is on sale, or has been on sale. Incidentally, no supercharged cars are allowed.

Almost every part of the car must be perfectly standard, but notable exceptions are tyres, electrical equipment, shock absorbers, and, strangely enough, pistons, although the compression ratio must not be altered. Full freedom is given concerning "modifications to facilitate driving or to improve comfort and add to road safety in regard to the steering wheel, controls, seats, tools, heating and ventilation."

That is why one hears of so many devices that do not appear on everyday cars—things like washbasins, built-in picnic baskets, little wipers on headlamp glasses, fog lamps that extend on trellis-like mountings, etc. All other modifications are forbidden under penalty of exclusion.

Competitors can cover any one of eight itineraries, starting respectively from Athens, Glasgow, Lisbon, Monte Carlo itself, Munich, Oslo, Palermo, and Stockholm. In each case many named towns must be passed through, and naturally this takes drivers through several countries. There is, however, a common route at the end of each itinerary, from Valence to Monte Carlo.

Results are determined by deducting or awarding marks for average speed above or below that specified for each stage of each itinerary; for compliance or otherwise with the mechanical regulations—or the spirit of them; and for performance in the regularity-speed test on the special route from Gap to Monte Carlo, and in the speed test on the Grand Prix de Monaco circuit. A general result is drawn up for all cars, irrespective of category, and a special result for the 2nd, 3rd and 4th categories. Car classifications are as follows: 1, over



1,500 c.c.; 2, over 1,100 c.c. and up to 1,500 c.c.; 3, over 750 c.c. and up to 1,100 c.c.; and 4, up to 750 c.c.

The complete inspection of cars takes place *after* the event, and it is then obvious whether the identification marks put on various parts of the car at the start are intact or not. Other deficiencies such as a missing mudguard, missing spare wheel, non-operative starter, hooter, silencer, etc.,

might also be painfully obvious, and would be the subject of loss of marks. Most of such things mean losses of 10-50 marks, but if the entire lighting system is out of order, the poor competitor loses 100

basic speed, and marks allotted according to a mathematical formula taking account of the difference between the actual times taken for other sections and the times that they *would* have taken if they had kept the same average as on the second section . . . I hope I make myself clear!

The speed section on the Grand Prix

Cars are inspected for mechanical condition on reaching the finish at Monte Carlo. The illustrations on this page and the previous one are reproduced by courtesy of The Autocar.



marks! A missing starter, dynamo, silencer etc. means exclusion.

Competitors must cover one of the itineraries given, but can take any route from one control point to another. All normal traffic regulations and limits must be observed. There are, of course, penalties for lateness, and for being so early as to have averaged over 65 kiloms. per hr.

Except for the Gap-Monte stage, which is a special test, each stage is to be covered at 50 k.p.h. (31½ m.p.h.), with no allowance for time spent at controls.

The marking for the special speed-regularity test is ingenious. The route is divided into four sections, and competitors must cover them at an average which they themselves have selected, but this must be between 45 and 65 k.p.h. The time that they average on the second section will be taken as the

account. The usual road-race regulations apply.

That, then, is about the measure of it, although as I have already pointed out, the actual "regs." are far more detailed. And behind all the prosaic words and rules and regulations one must have that vision of the bitter struggles, disappointments, joys, dangers and exhilarations of the historic competition.

More than any other motoring event, this one stirs the imagination and compels the interest of enthusiasts and ordinary people all over the world. It is not surprising that competitors receive every encouragement and assistance from the manufacturers, and that they, in turn, seek out the cream of sporting drivers to pilot their products and spread their particular "gospel." I think we must wish *every* gallant driver the very best of luck!

The Aero-Isoclinic Wing—

(Continued from page 23)

not new, and were fitted to the Hill Pterodactyl as long ago as 1925. They may now help to solve problems of flight at speeds and altitudes that were not dreamed of then.

The present Sherpa is intended only for low-speed tests. It is a simply constructed wooden aircraft, with fixed undercarriage, powered by two 350 lb. thrust Turboméca

Palas baby turbojets. But its designer, Mr. David Keith-Lucas, believes that high-powered civil and military aircraft on the same lines would be capable of supersonic flight at very high altitudes, with far better control and manœuvrability than present high-speed machines. So, although it all sounds a little complicated, it is just as well to know something about aero-isoclinic wings, as they are certain to be in the news a lot in the next few years.

The U.S.A.F.'S Trapeze Artists

By John W. R. Taylor

THE U.S.A.F.'s great ten-engined Convair B-36D is the most formidable bomber in service anywhere in the world. With its 16 guns, over-the-target speed of 435 m.p.h. and ability to carry an atomic bomb over a range of 10,000 miles, it has long been the most prized weapon in the Western Powers' armoury, the best available deterrent to aggression. The RB-36D photo-reconnaissance variant has always been equally important, as the only aircraft able to take vitally-important intelligence photographs of distant targets.



tomorrow's warplanes cannot keep the peace today, and the U.S.A.F. has been searching for ways to bridge the gap until the B-52 is in squadron use.

Some experts saw a solution to part of the problem in the Republic F-84G Thunderjet fighter, which can carry baby atomic bombs, and which has been flown non-stop across the Atlantic after refuelling in flight. Theoretically, there is no limit to the time a fighter can be kept airborne by flight refuelling; but there is a limit to the length of time its pilot will be able to stay awake and alert inside its cramped cockpit,

breathing oxygen, navigating as well as controlling his aircraft and,

Republic sweptwing F-84F Thunderstreak fighter about to make contact with the retrieving mechanism of a Convair RB-36 carrier aircraft. Photograph by courtesy of Consolidated Vultee Aircraft Corporation, U.S.A.

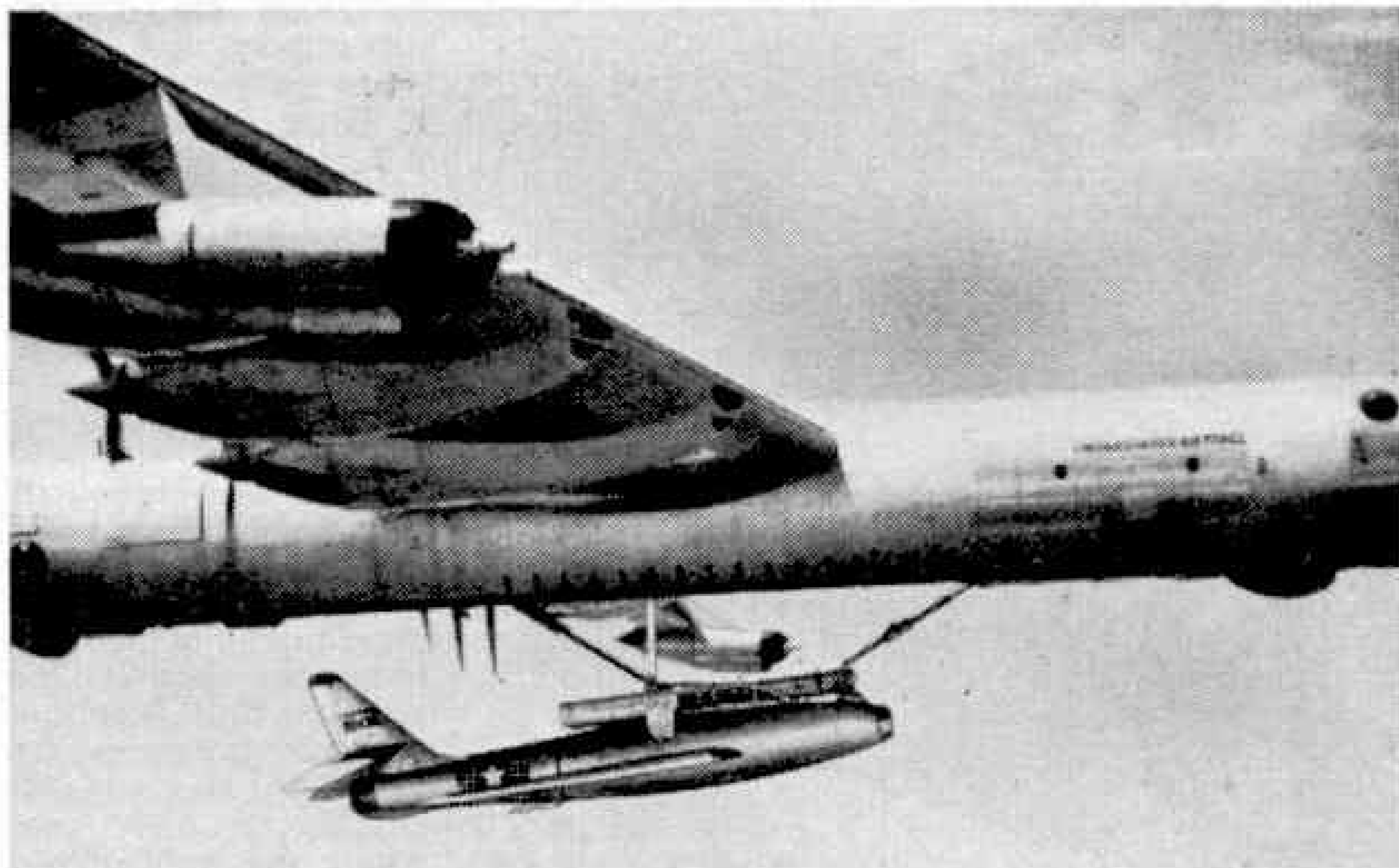
in wartime, watching for enemy interceptors. So the Thunderjet is likely to

Unfortunately, these aircraft may no longer be good enough. In Korea, the Russian-built MIG-15 showed itself to be a tough fighter at the B-36's operating height of around 40,000 ft., and it is certain that strong defensive armament by itself is no longer sufficient protection against fast-climbing jet interceptors or the first, primitive anti-aircraft guided weapons now entering service. To be sure of reaching their target, modern bombers and reconnaissance aircraft must fly very high and very fast, out of reach of fighters. Which explains why the R.A.F.'s splendid new "V" bombers will fly above 60,000 ft., at speeds approaching the speed of sound.

America too has a new, tremendously powerful jet bomber on the way—the Boeing B-52 Stratofortress, illustrated on page 29, which is in production for both bombing and reconnaissance duties. But

remain, like the Canberra, a tactical bomber. In any case, its speed and armament are considerably less than those of the MIG-15 and other modern sweptwing jets.

It has, however, been succeeded in production by the sweptwing F-84F Thunderstreak fighter and RF-84F reconnaissance-fighter, each powered by an 8,300 lb. thrust Wright-built Sapphire engine, which gives them a speed of around 650 m.p.h. This gave somebody a bright idea about three years ago. He remembered experiments in which it was proposed to carry a tiny McDonnell XF-85 Goblin jet fighter inside the bomb-bay of a B-36, so that it could be launched over the target to defend the bomber from enemy fighters. By substituting a Thunderstreak for the Goblin, it looked as if the U.S.A.F. might be able to combine



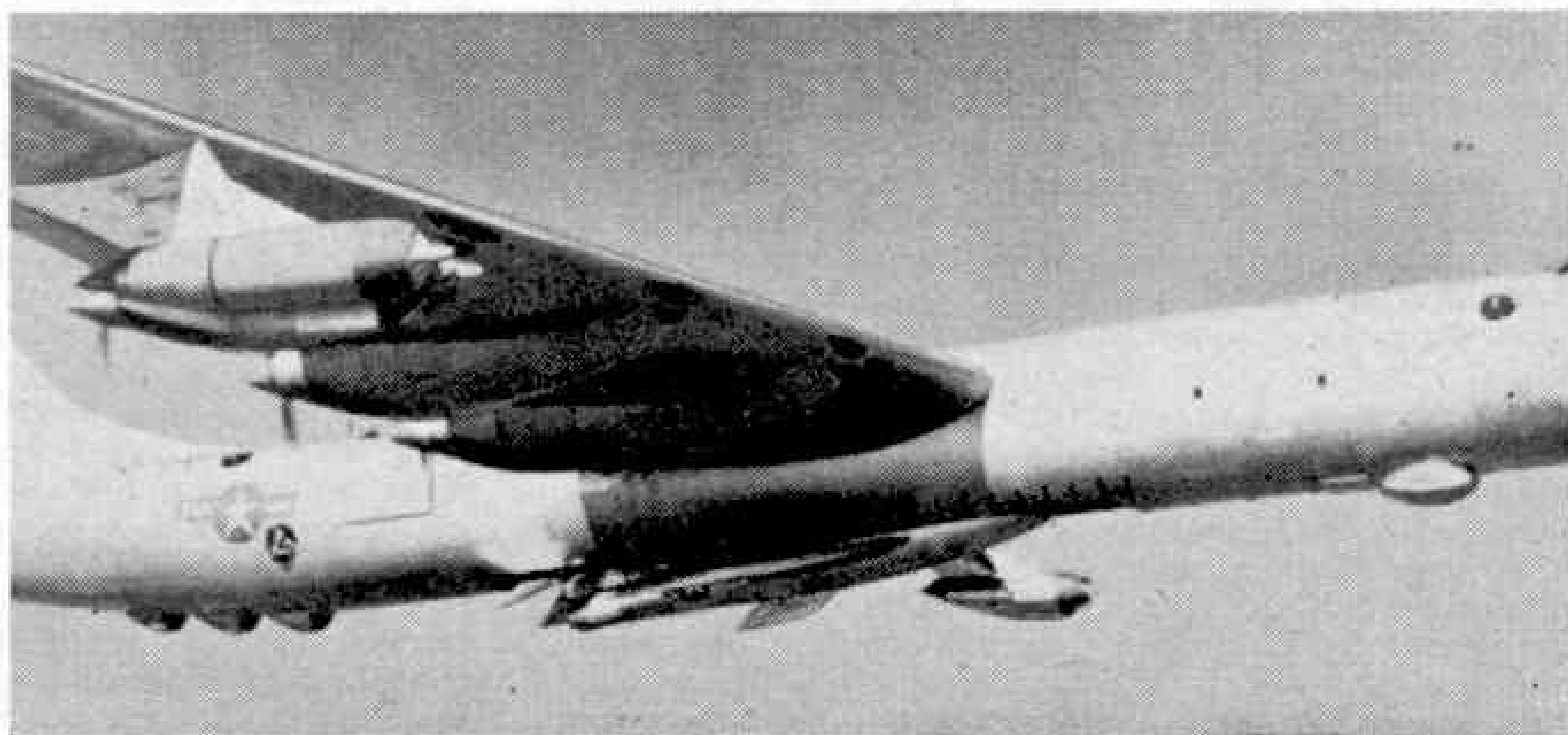
The Thunderstreak securely anchored to the boom of the trapeze mechanism, and being hauled up into the bomb-bay of the mammoth bomber. The illustrations on this page are reproduced by courtesy of Republic Aviation Corporation, U.S.A.

the speed of the fighter with the range of the bomber to produce a very effective bombing or reconnaissance weapon. So was born the project known as FICON, and which is illustrated on these pages.

The U.S.A.F. will admit officially only that the scheme enables an RB-36 to carry an RF-84F reconnaissance-fighter on extra-long range photo-reconnaissance missions, where speed is essential over the target to escape enemy opposition. But the suitability of the B-36/F-84F team for more offensive roles is too obvious to be a coincidence.

Unlike the Goblin, with its multi-finned tail, stubby fuselage and folding wings, the Thunderstreak will not fit right inside the B-36's bomb-bay. But by cutting away the bay, it can be cradled quite neatly under the bomber, in the way that the Bell X-1 and Douglas Skyrocket research 'planes were carried under a B-29 "mother-plane" for their supersonic flight tests. The only major modifications needed on the fighter were to sweep its tailplane down instead of up, and to provide fittings on its nose and behind its cockpit to pick up the "trapeze" carried by the B-36.

"Landing" completed and the Thunderstreak "snuggled" neatly into the fuselage of the "mother-plane." There it can be kept for the remainder of the flight, or be lowered and launched for another mission.

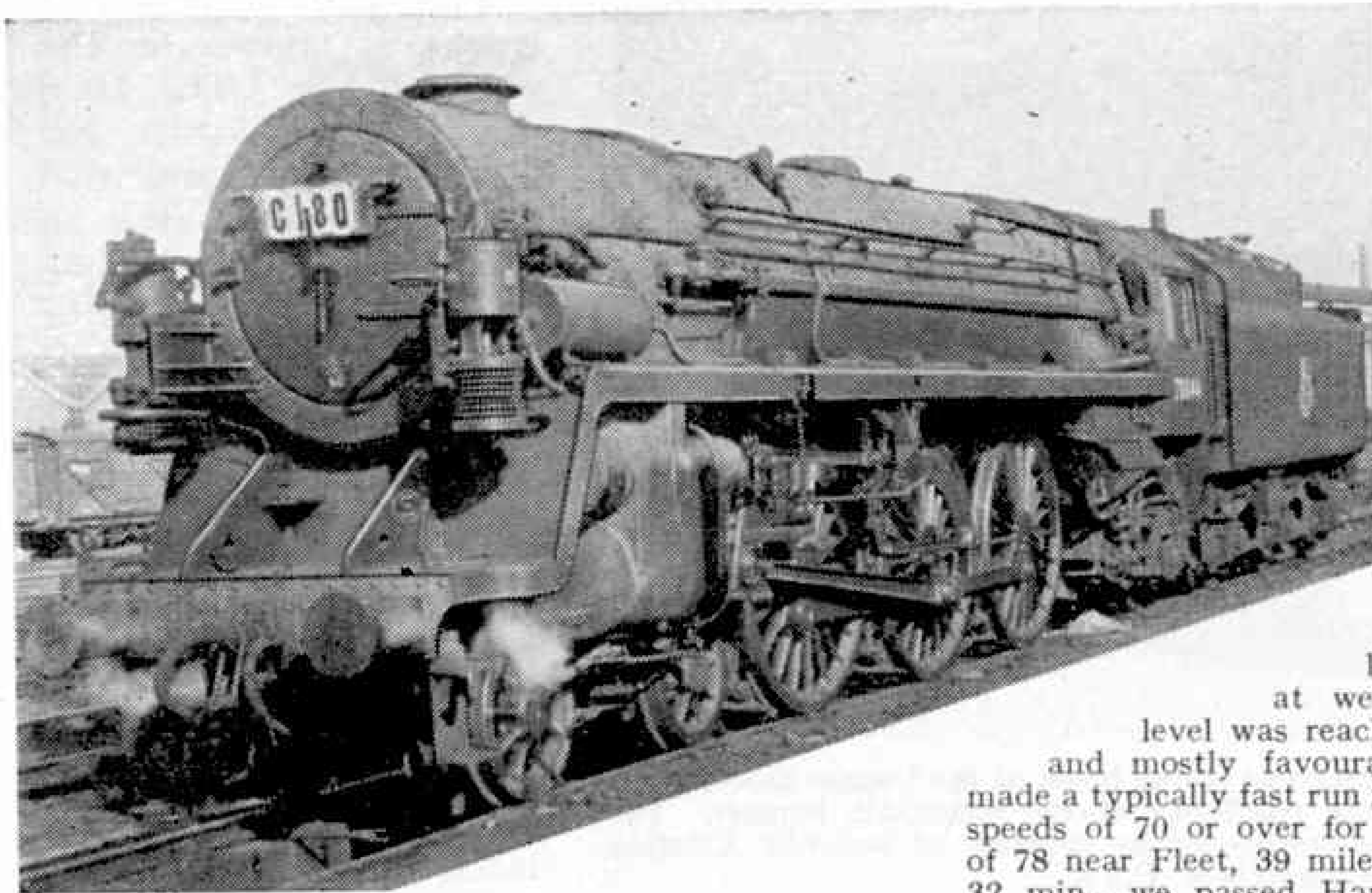


The way in which it works is shown in the photographs. The B-36 can take off with the F-84F in place, and with the fighter pilot either in his cockpit or resting in the bomber. For launching, the fighter is simply lowered at the end of the trapeze. Its engine is started, and it is then dropped clear in the way that a bomb is dropped. After it has made its reconnaissance or bombing mission, it re-engages the boom of the trapeze, with a probe on its nose. Another latch at the rear of the boom catches hooks

behind the fighter's cockpit and it is hauled up into the bomb-bay again.

Like so many of today's "new" ideas in aviation, the "flying aircraft carrier" is nearly as old as military flying itself. Early in the 1914-18 War, the Royal Naval Air Service planned to extend the range of the B.E.2c reconnaissance biplane by carrying it under a non-rigid airship. Unfortunately, when the final test was made on 21st February 1916 the B.E.2c did not release itself properly, and crashed.

Despite this tragic disappointment, the idea was revived in 1918, when Lieut. R. E. Keys, D.F.C., of No. 212 Squadron successfully flew a Sopwith Camel fighter from a trapeze under the airship R.23 at Howden Air Station. Further successful experiments were made in England in 1925-26. America made similar experiments at about the same time, but the whole idea was dropped when a series of accidents brought to an end the development of big rigid airships in Britain and America.



Britannia No. 70044, still without nameplates when photographed by E. Higgs, Birmingham. The engine is distinguished by its twin Westinghouse pumps and the absence of smoke deflectors.

The Atlantic Coast Express

The A.C.E., as it is often called, is one of the few Southern named trains, and is notable and indeed unique in several respects. It is the quickest on the S.R. London - Devon - Cornwall route and between Waterloo and Salisbury, where in winter it is the only non-stop service, with a decidedly fast schedule. This is also the case along the steeply graded main line between Salisbury and Sidmouth Junction, which is the only other booked stop on the London-Exeter run in each direction.

The 11-coach train as I found it ready to start from Waterloo on a rather stormy morning in November last was behind Merchant Navy 4-6-2 No. 35018 *British India Line*. Its handsome and comfortable modern vehicles included single through carriages for Ilfracombe, Torrington, Padstow, Bude, Exmouth Sidmouth and Seaton, two for Plymouth, and the restaurant and kitchen-tavern cars for Exeter, so that there were no less than nine different destinations. The Seaton coach is detached at Salisbury to go forward on a following slow, and those for Sidmouth and Exmouth are detached at Sidmouth Junction. Those bound beyond Exeter are attached to two separate trains from there that are split up again at appropriate junctions. The kitchen-tavern car on this occasion was *At the Sign of the Three Plovers*.

The strong head or cross wind was a handicap going down, and we suffered an unluckily severe delay owing to a prolonged power and signal failure between Woking and Farnborough, so a late arrival was unavoidable. The engines work through between Waterloo and Exeter, with a change of crew at Salisbury, on what is an arduous locomotive turn.

The corresponding up express had done splendidly from Exeter under kinder atmospheric conditions, headed by the pioneer Bulleid Pacific *Channel Packet*. After attachment at Salisbury, we left punctually with a 12-coach train weighing 420 tons with passengers, including through carriages from Padstow, Bude, Plymouth, Torrington, Ilfracombe, Exeter and Yeovil. Driver Lay had told me that he would be retiring in a few months after 49 years' service and long experience as an express driver at Nine Elms depot. His mate was Fireman English, a senior in his grade.

It is a hard pull for the first nine miles. We worked up to 47 m.p.h. past Amesbury Junction accelerated

to 78 on the descent before Andover and topped the subsequent rises to mile-posts 62½ and 53½ from London at 64 m.p.h., with a maximum of 70 in between. Near Oakley and Worting Junction, where the Bournemouth line joins in, the summit at well over 300 ft. above sea level was reached. Along the well aligned and mostly favourably graded track we now made a typically fast run in supreme comfort, enjoying speeds of 70 or over for 34 miles, with a maximum of 78 near Fleet, 39 miles being covered in just over 32 min., we passed Hampton Court Junction, 70½ miles, in 67 min., so that an arrival at Waterloo in 83½-84 min. for the 83½ miles was quite possible had not another train been closely in front through the busy suburban area, causing signal checks. The overall time to the terminal stop was 87½ instead of the 85 min. allowed in the service time-table, though the public book shows 87 min. It had been a very nice run!

More Southern Observations and News

The lower illustration on the opposite page depicts one of the powerful "Schools" 4-4-0s that for a long time has been stationed at St. Leonards, where Nos. 30900-10 are now allocated. They continue to perform well over the hard Hastings-Tunbridge Wells-London route and sustain a fine record for average timekeeping. When the photograph was taken Sevenoaks Tunnel was closed for repair so diversion was necessary by way of Redhill, Purley and Croydon between Tonbridge and London Bridge.

With moderate loads "Schools" made some very fast runs before the recent war to and from Salisbury on portions of the *Atlantic Coast Express* while operating from Nine Elms. About the same time they proved remarkably efficient on the heaviest Waterloo-Bournemouth expresses of the day.

Last summer I logged No. 30905 *Tonbridge* hauling the heaviest London-Hastings train, the 5.6 p.m. business service from Cannon Street, having a gross load of 385 tons behind the tender to start with, 11 corridors throughout including a Pullman buffet car. A half minute was gained to Tunbridge Wells, with some good climbing and a maximum of 76 m.p.h. downhill, and another half minute to the second stop at Etchingham. Signal and repair checks prevented an exactly punctual arrival on the coast.

Hop pickers' friends in their thousands travelling back to London after week-end or day visits to the Kentish countryside necessitate a somewhat intensive series of special trains on Sunday evenings in September. On such a peak evening at Tonbridge, main line junction station, I saw 14 specials call on their way to London Bridge and suburban stations, some going via Edenbridge and Oxted, hauled by L1, L and D1 4-4-0s, with one D and a V 4-4-0, several C 0-6-0s and an N1 2-6-0. There were several other additional coastal and main line trains, as well as the customary summer Sunday evening traffic of considerable extent along the Folkestone, Hastings and other routes.

Railway Notes

By R. A. H. Weight

Another interesting summary supplied by a friend of mine who was recording at Basingstoke on an August Saturday, and in 10½ hours, including observations while travelling from and to Waterloo, noted 17 different Merchant Navy class engines; 14 light Pacifics; 12 Nelson, 32 King Arthur, six Remembrance and 16 mixed traffic 4-6-0s; four U and three B.R. standard 2-6-0s; two D15 and one T9 4-4-0s; and three main line diesel locomotives, all on S.R. duties. W.R. engines included five Hall and two Grange 4-6-0s, and three 43xx Moguls.

Class 4 2-6-0s are allocated to Eastleigh up to No. 76029 as completed at Doncaster, making 20 in all numbered 76005-19 and 76025-9. L1 4-4-0s recently moved to Ashford shed are numbered 31756-9, 31782. I saw No. 31787 of Eastleigh at Andover Junction in November. A number of locomotives of different types is stored for the winter.

N15x 4-6-0s stationed at Basingstoke have been noted on special workings between Guildford and Redhill. News of A1x Terrier 0-6-0Ts is that No. 32650 has been restored to traffic stock and allocated to Fratton, and the former No. 32659 has become a service locomotive for Lancing Works, as DS 681, DS 515 having been dispensed with. No. 377S, the Brighton works shunter, has received a new coat of old style yellow paint.

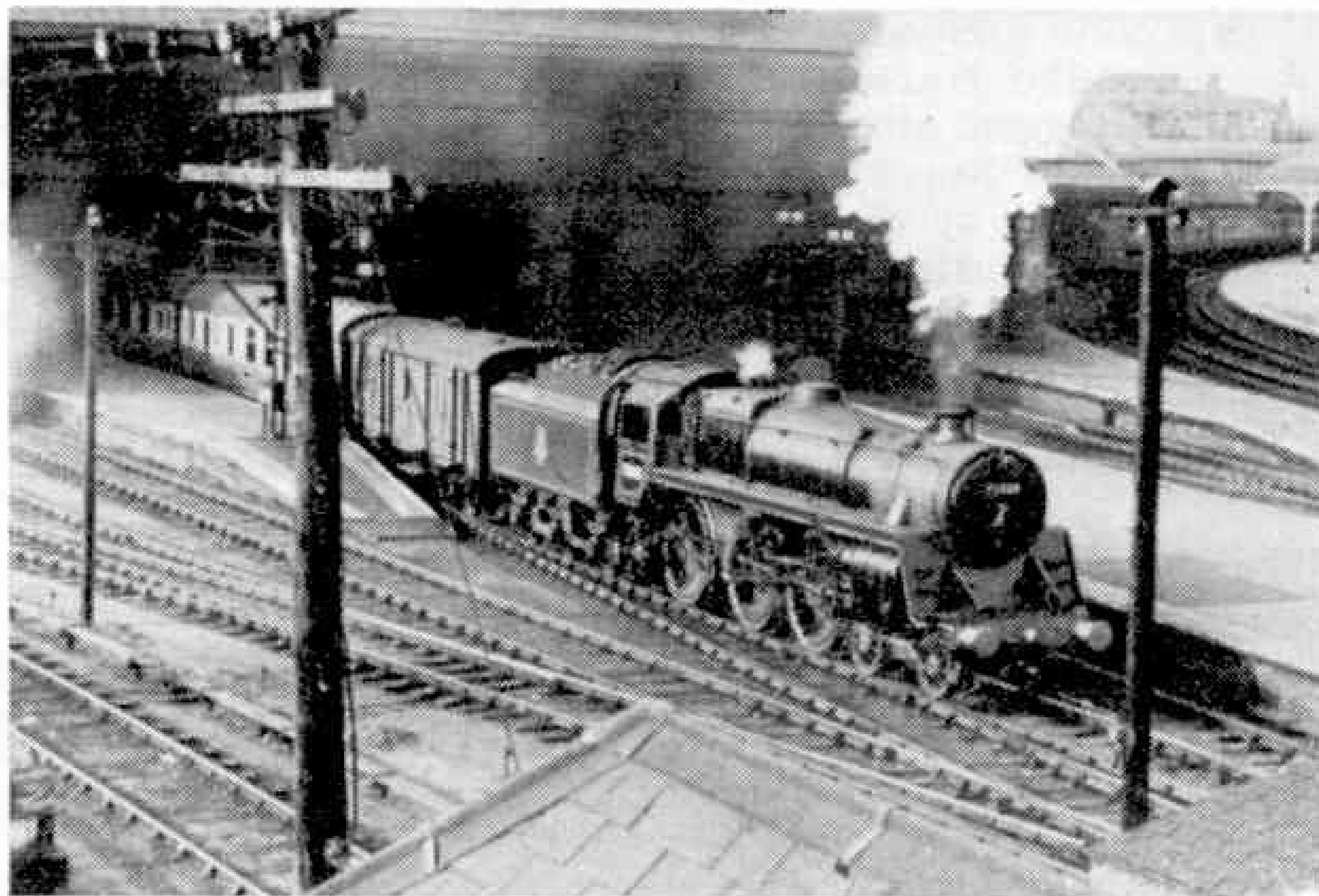
All erstwhile Somerset and Dorset Joint Line engines of Midland or L.M.S. origin have been incorporated in S.R. stock, numbering over 60. C 0-6-0s Nos. 31090, 31234 and 31580, 02 and R 0-4-4Ts Nos. 30221, 31662 and E5 0-6-2T No. 32573 have all been withdrawn.

Western Tidings

Two fine performances by comparatively small mixed traffic Hall 4-6-0s working long-distance expresses last summer were noteworthy. One was an arrival at Taunton 2 min. early with the 14-coach 11.30 Paddington-Minehead train, despite three signal stops and several other slowings, representing a nett time of about 140 min. for 142½ miles by No. 7928 *Wolf Hall*. The other was a gain of 30 min. by No. 6965. *Thirlstaine Hall* with a heavy 11-set on a

moderately timed Saturday Torquay summer express non-stop from Exeter to Paddington, equalling the best *Torbay Express* schedule, and recovering a remarkable amount of lost time.

King Charles II had no difficulty whatever with a 12-coach, 405-ton load on the 60 m.p.h. timing from Swindon to London, on a run logged by Mr. D. S. Barrie. Speed over the beautifully graded road rose



Perth departure. B.R. standard 4-6-0 No. 73008 starts briskly away with the 6 p.m. for Glasgow. Photograph by G. D. Parkes, Oxford.

to a maximum of 71 m.p.h., and did not drop below 62 for 67 miles.

Enormous loads of up to 25 bogies, including dynamometer car with other testing apparatus, were hauled on special trial runs over the Swindon main line by No. 6001 *King Edward VII*, one of the 15 Kings fitted with new boilers containing much larger superheaters. The present London-Birmingham services include two accelerated 2-hr. timings and seven others taking not more than 2¼ hr., usually with two stops.

The last of her class, No. 2920 *Saint David* 2-cylinder 4-6-0, has been withdrawn. During the late summer this engine performed many duties in the Hereford-Worcester area and also hauled several fast ordinary or special trains to and from Paddington.

New 0-6-0 diesel electric shunting locomotives numbered 13025-30 built at Derby are allocated to the Western Region. A number of class 5 B.R. 4-6-0s is on loan from L.M.R. depots. No. 73034 worked a horse-box special through from Chester to Salisbury, a long run, and No. 73022 was reported similarly employed as far as Didcot. Class 3 2-6-2Ts, 82001-9, are stationed at 88C, Barry.

Scottish Locomotive Notes

Additional 2-6-2T conversions from V1 to V3 class are Nos. 67605, 67612, 67625 and 67627. No. 55359, just withdrawn, was the last of the former Caledonian Railway "Wemyss Bay Tanks," built in 1917 with the 4-6-2 wheel arrangement, superheater, outside cylinders and piston valves for the Clyde coast passenger services.



Schools class 4-4-0 No. 30903 Charterhouse passes Purley Oaks on a Hastings train diverted from its normal route. Photograph by R. Russell.

Swing Trains of the Northlands

Transport Hazards of the Arctic

By Frank Illingworth

THE crew jumped for their lives as the caterpillar tractor broke through the ice and dragged after it the first two of a long line of heavily laden sledges. The mercury stood at 40 below.

The frozen surface of Great Slave Lake was consumed in whirling snow. When the sledge train failed to arrive at the gold mining town of Yellowknife on schedule, aircraft went up to search for it, and three

edge of the ice barrier into the sea, drowning the young Swedish explorer, Bertil Ekstrom.

They are proving of the utmost value to the men of the British Expedition in Northern Greenland, where they are used to transport tons of food and gear from the Base at Young Sound to the Expedition's outposts on the Ice Cap. So broken is the country that it has proved necessary to rope the caterpillar tractors

together as a precaution against their falling through snow bridges into the blue depths of crevasses. But still they shuffle backwards and forwards.

A type of half-tracked vehicle fitted with skis in place of front wheels has been tested in Arctic Canada and Scandinavia for an Antarctic expedition planned for this winter by the Australian Government in Canberra. It will draw the expedition's sledges.

And the caterpillar tractor is no less essential to the industrial development of the Arctic. It has,

indeed, replaced the husky as the key to industrial transport in the Northlands.

During the short Arctic summer heavy freight is delivered to the new industrial centres by barge along the rivers that flow into the Arctic Ocean. But in October rivers and lakes freeze. Thousands of square miles of bog that are impassable during the summer become hard frozen, and the predominant sound is the roar of the caterpillar tractor and the bucketing lurch of their cumbersome sledge trains.

Go to Labrador this winter and you will see them rumbling along the trails serving the new railway Canadian engineers are throwing across nearly 400 miles of rock to the biggest-known deposit of iron ore in the world.

Very often the buildings of a mining

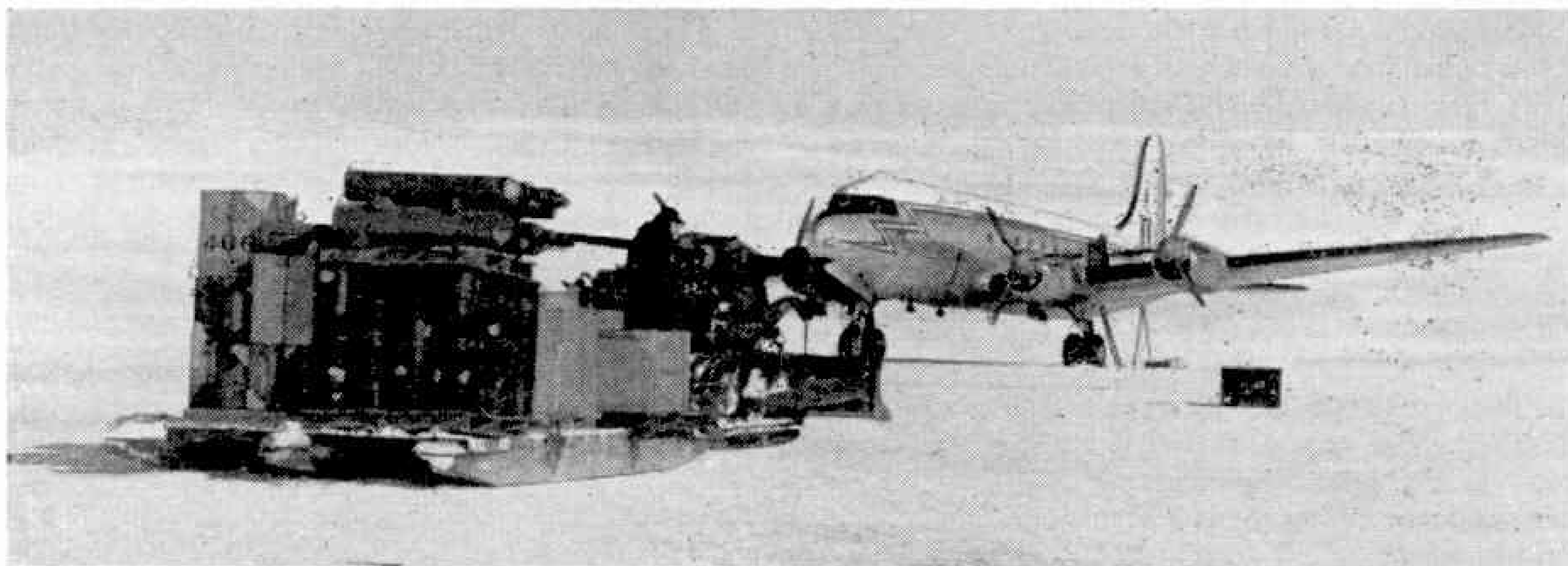


Sleds loaded with reinforcing steel and crusher parts hauled by giant tractors in convoy en route to Menihek power site, near Burnt Creek, the site of iron deposits in Labrador, during the construction of the railway from the St. Lawrence. The first sledge carries a snow plough to clear the way.

days later a dozen brawny salvage men were put down on the ice to help haul the tractor and two of the heavy sledges back to safety.

Such is a typical episode in the life of the men who spend the Arctic winter delivering supplies to the new industrial communities that have sprung up in the wilderness of Northern Canada and Alaska since the war.

We have travelled a long way since Capt. Robert Scott used tracked vehicles during his fatal attempt to reach the South Pole. Caterpillar tractors are today one of the keys of exploration. They formed an important item in the equipment of the recent Anglo-Scandinavian Expedition to Queen Maud Land in the Far South, flaring into the news when during a fog one of them plunged over the



A two-sledge swing with cargo for loading into an aircraft bound for a meteorological station 600 miles from the North Pole.

settlement are mounted on runners, and were you to have gone to Lynn Lake last winter you would have seen tractors hauling buildings of a mining settlement to a new location 400 miles away. They are at work too among the mountains of Northern British Columbia, where one of the world's largest electric power and aluminium manufacturing projects is nearing completion.

Week after week, lines of sledge trains lurch across broken country to Aklavik, just a little south of the Arctic Ocean, and week after week they rumble across more than 1,000 miles of rock, scrub and tundra to the new uranium fields of Northern Saskatchewan and Canada's frozen North-West Territories.

So it is over something like ten million square miles of Arctic territories, Canadian, American and Russian.

When I was in a remote corner of

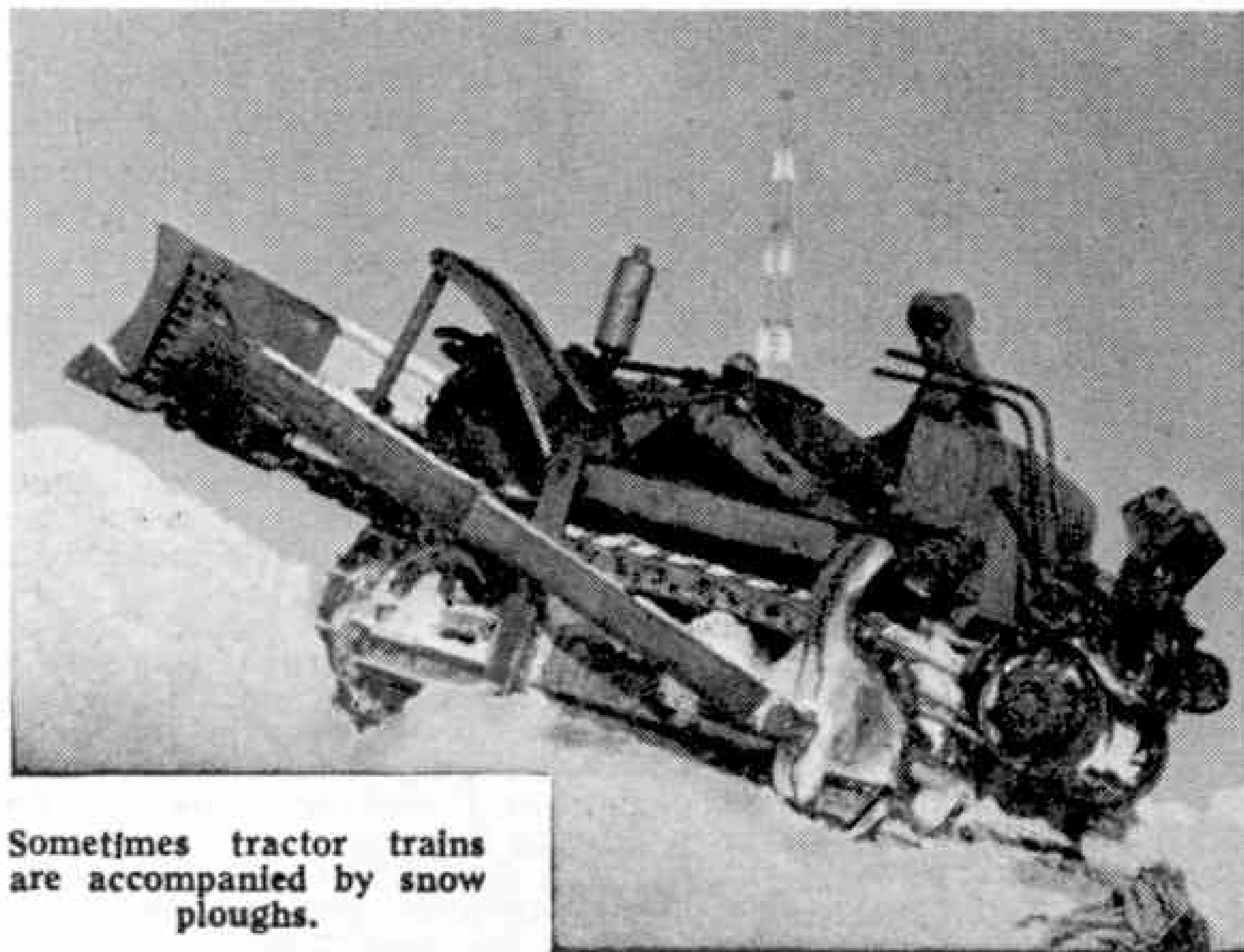
Canada's Yukon last year, a tough but little man by the name of Williamson said: "Things have sure altered since I entered the freighting business twenty years ago! In them days we used pack horses and sledge dogs. It was tough going. I've often known the horses die of cold, and sometimes men died. But today? Well, it's too easy."

Williamson's next sentence would be puzzling to those who do not know the North. He said: "There's a caboose on one of the sleds in each swing and a cookhouse on the next one. And we get anything up to ninety dollars a week (£30) for skinning a cat." What did he mean, you ask. Well, in the Arctic the driver of a caterpillar is known as a catskinners; tractor driving is alluded to as "skinning a cat," and a tractor train is called a swing.

In spite of cabooses and cookhouses the life of the men of the Arctic sledge trains is one of the hardest in the world. Very

often the cold is so severe that the oil freezes in the caterpillar tractors and the metal tracks shatter with crystallisation.

There are records of swing crews being attacked by wolves or grizzly bears. Hi Johnson, a slender but tough Canadian, would confirm this. Wolves surrounded his swing when it broke down one day on the trip from the Alaska Highway across 500 miles of rough territory to the new oilfields away in the Arctic of the North-West territories. The men shot five wolves before the pack dispersed, and barely had Johnson repaired his caterpillar tracks before a grizzly bear charged and killed one of his men.



Sometimes tractor trains are accompanied by snow ploughs.

Blizzards are another hazard. Typical of what these can do is what happened to Hal Dodds during the monthly run to one of the mining settlements north of Hay River. His swing was almost snowed over during a raging storm; food ran out and Dodds and his men would undoubtedly have died of exposure had they not succeeded in getting a radio message through to their base.

The caterpillar tractor trains of the Northlands carry radio transmitters, and an SOS sees light aircraft set off to drop food, spare parts or medical supplies to a stranded swing crew.

Blizzards, wild animals and the risk

A "weasel," of the type used by Antarctic explorers. This was tested in the winter of 1949 on the highest mountain area in Swedish Lapland.

of crashing through ice of lake or river are just some of the dangers of the swing trails. Ted Cinammon, a catskiner on the run to the gold mining settlement of Yellowknife, had a near shave recently when his cat broke through the ice of Great Slave Lake. As the ice crumbled he leapt for it, only to find that his gloves had been frozen to the tractor's controls; that's to say he dragged hands from gloves which remained frozen to the wheel.

The tradition of the sledge train crews is "the swing must get through." So it was in this case. The steel links between the caterpillar tractor and the sledges had held, and by the end of the day Ted Cinammon and his men had their sledge train back on the ice intact, and four days later they tumbled into Yellowknife with ten tons of supplies.

There is a common bond among the men of the swing trails. One crew will turn out in below zero weather to help a rival crew out of difficulties. They erect crossed evergreen branches at the approaches to a bottomless bog, on thin ice, or to mark some other hazard.

The crews work two-day shifts. The work is gruelling. But there can be little sleep for the off-duty men. The swings lurch and sway so that it is nothing uncommon for a heavily laden sledge to overturn, and



for a newcomer to the swing crews to be violently sick. The husky young man who joined the swing on the rough God's Lake run as brake man did not have time to condition his stomach to the lurching. Said Hi Johnson, his crew leader: "He was changing his clothes in the caboose when it broke through the ice and he went down with it."

Air freighters fly regular schedules to the larger of the Arctic's industrial settlements. But it is on the swings and their men that the miners and construction workers of the Northlands mainly rely for their supplies, and it is seldom that the swings fail to get through.

My First Monte Carlo Rally—(Continued from page 6)

we should have to make up time, but if it were behind us this would be pointless. What were we to do? We soon decided that the best plan was to make up half of our lost time, to equalise the amount of error as nearly as possible. This was a fortunate decision, for actually the secret check was on this downward run, and from that point to the finish we were 28 seconds ahead of the time dictated by the prescribed speed.

So the Rally came to an end, but to all three of us the next five hours were far more trying than any trouble or hindrance on the road. They ended at last, when I charged through the revolving doors of our

hotel to tell John and Desmond that we were second, with Sydney Allard first. A wonderful victory for Britain, the first for twenty years and the best British showing since the Rally began in 1911.

Soon I shall be setting off once more on the long winter trail that leads to Monte Carlo, again in a Sunbeam-Talbot 90 team. Will snow and ice this year be of record proportions, or will the roads be comparatively open and inviting? I do not mind which. Whatever the conditions I shall enjoy the run, for which I shall prepare as thoroughly as I know how. However well we do I doubt if it will give us the excitement and the exultation that our first effort brought us on that day two years ago.

John W. R. Taylor introduces you to:

The Aero-Isoclinic Wing

AIRCRAFT designers and test pilots are not the only people to whom the so-called "sound barrier" has brought its problems. Pity the poor air journalists

than intended and might cause a structural failure. At the same time, the change in incidence can easily cause the ailerons to lose their effectiveness, so that the pilot has difficulty in controlling the aircraft.

The Sherpa's aero-isoclinic wing is much more flexible than a normal wing. As a result, when extra strong loads are imposed on it, it begins to twist as well as to bend slightly. By careful design, it can be made to twist in such a way that the wing tip incidence



(like me!) who have to try and explain all the complex technicalities of supersonic flight in a way that even fathers can understand.

Sweptback wings and delta wings were not too hard to explain. Crescent wings were a bit more difficult; now Short's have come along with a real below-the-belt punch in the shape of the Sherpa research aeroplane, with an "aero-isoclinic" wing. The name of the wing is frightening enough: trying to explain how it works is far worse. Still, here goes!

When a normal sweptwing aeroplane pulls out of a high speed dive, its wings are subjected to greatly increased strain, which causes them to bend up slightly at the tips. The combination of bending and sweepback has the effect of decreasing the angle of incidence* of the wing tip and there is a serious loss of lift. As the wing tips are usually well behind the aircraft's centre of gravity, this loss of lift causes the machine to pull out of its dive more sharply

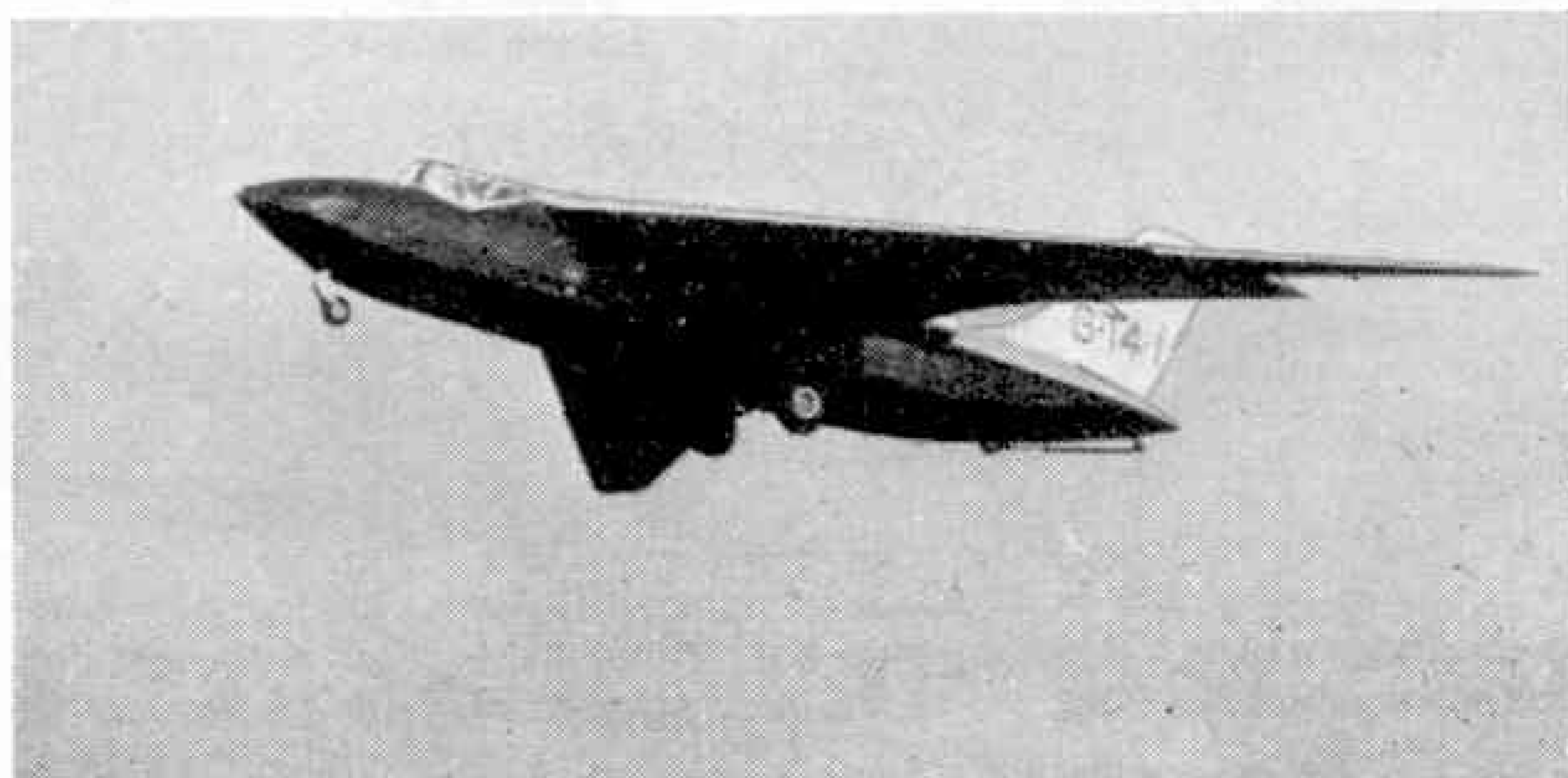
never changes, and the problems referred to above disappear.

Because of the twisting, however, it is not possible to use normal ailerons, and the whole wing tips of the Sherpa are designed to rotate through several degrees, like extra-large ailerons, as seen in the lower

illustration on this page. These rotating tips, which comprise about one-fifth of the total wing area, form such effective controls that no tailplane and elevators are necessary, and the Sherpa is therefore tailless.

Rotating tips are (Continued on page 15)

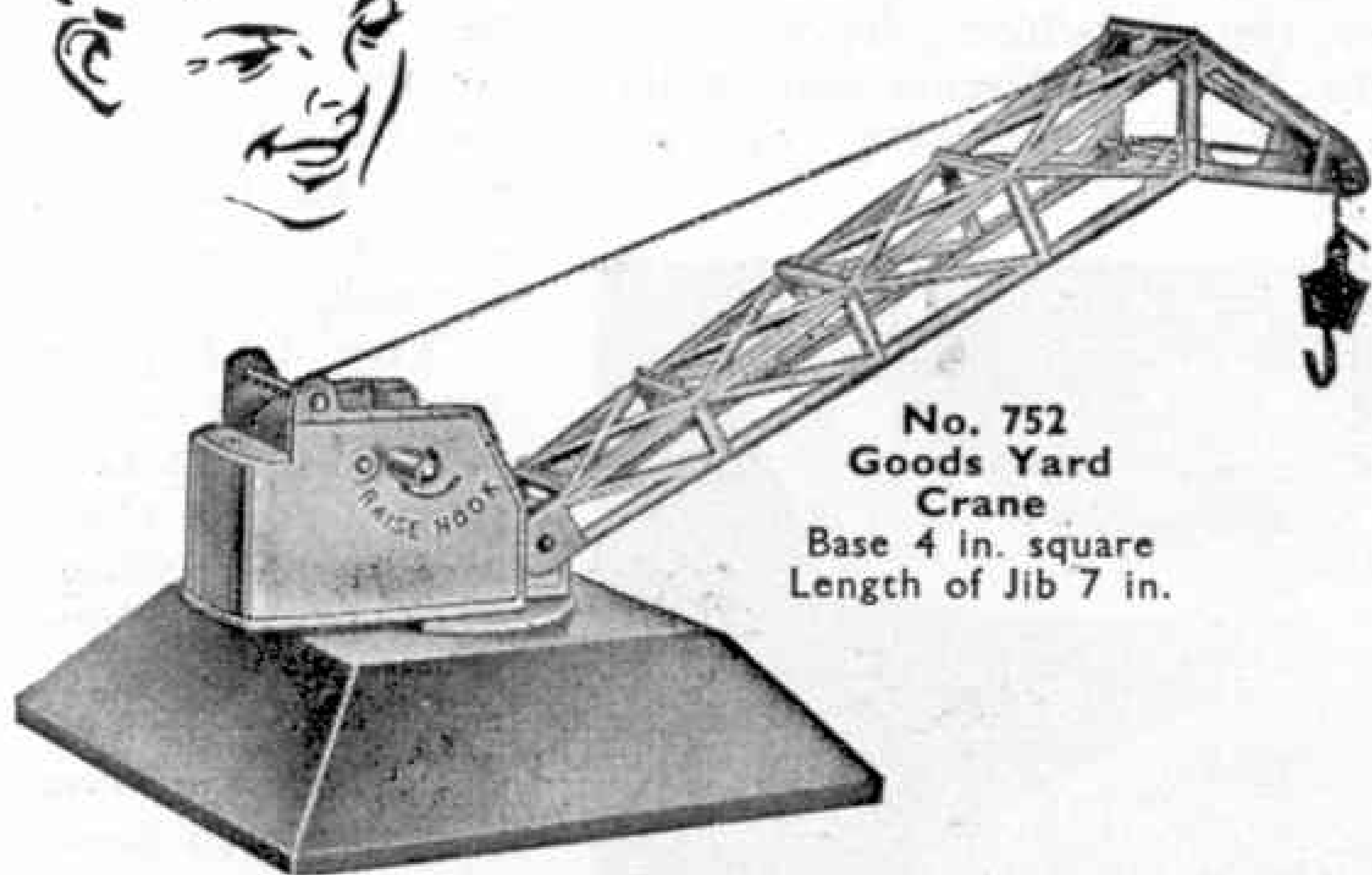
The shape of the aero-isoclinic wing of the Sherpa research aircraft is shown to advantage in the photograph above. The lower picture shows the machine taking off on its first flight, on the 4th October last year, with the rotating wing-tip controls in action. The name Sherpa, linked with the Mt. Everest success, was chosen because "Sherpas blazed the trail to great heights."



* Incidence is the angle at which the wing is set in relation to the fore-and-aft axis of the fuselage.



Have YOU got

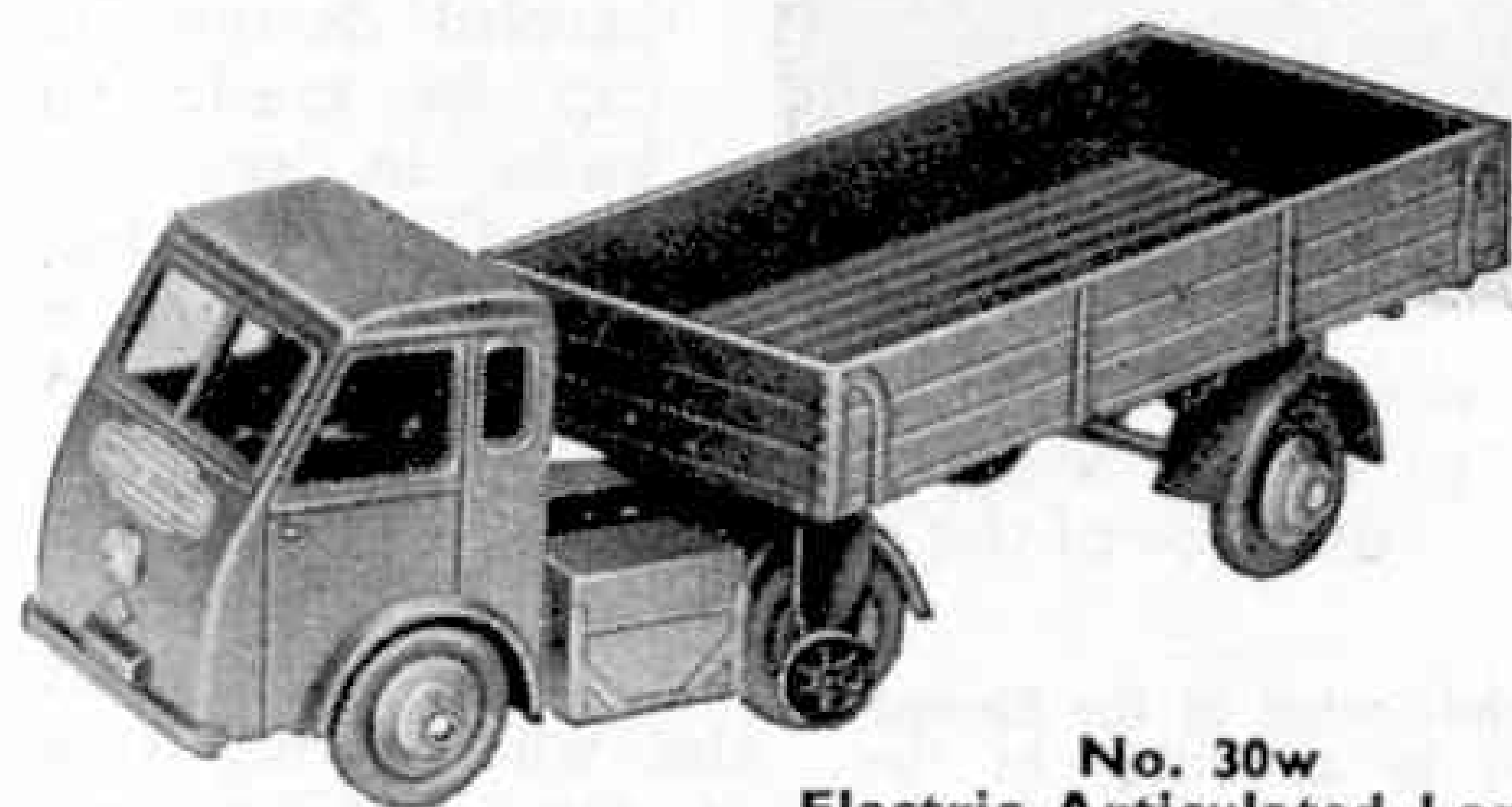


No. 752
Goods Yard
Crane
Base 4 in. square
Length of Jib 7 in.

Here displayed all together for you are for the International Road Signs. Have buy Dinky Toys to play with individual layouts or in games of various kinds, or pleasure in their appearance, you cannot of the past year.

There is no need for me to describe the illustrated in issues of the Magazine during miniatures of racing cars, in the racing provide plenty of variety and all are splendid of layouts including those that I have collected and shown to you in pictures in recent as much real fun with them as I have, and and of the many ways in which you make

There is no new Dinky Toy this month that no new one was announced in the for this is very simple. The demand for production is still so enormous that it squeeze any new ones in! But I promise many splendid newcomers that will add to world-famous miniatures give to all of you



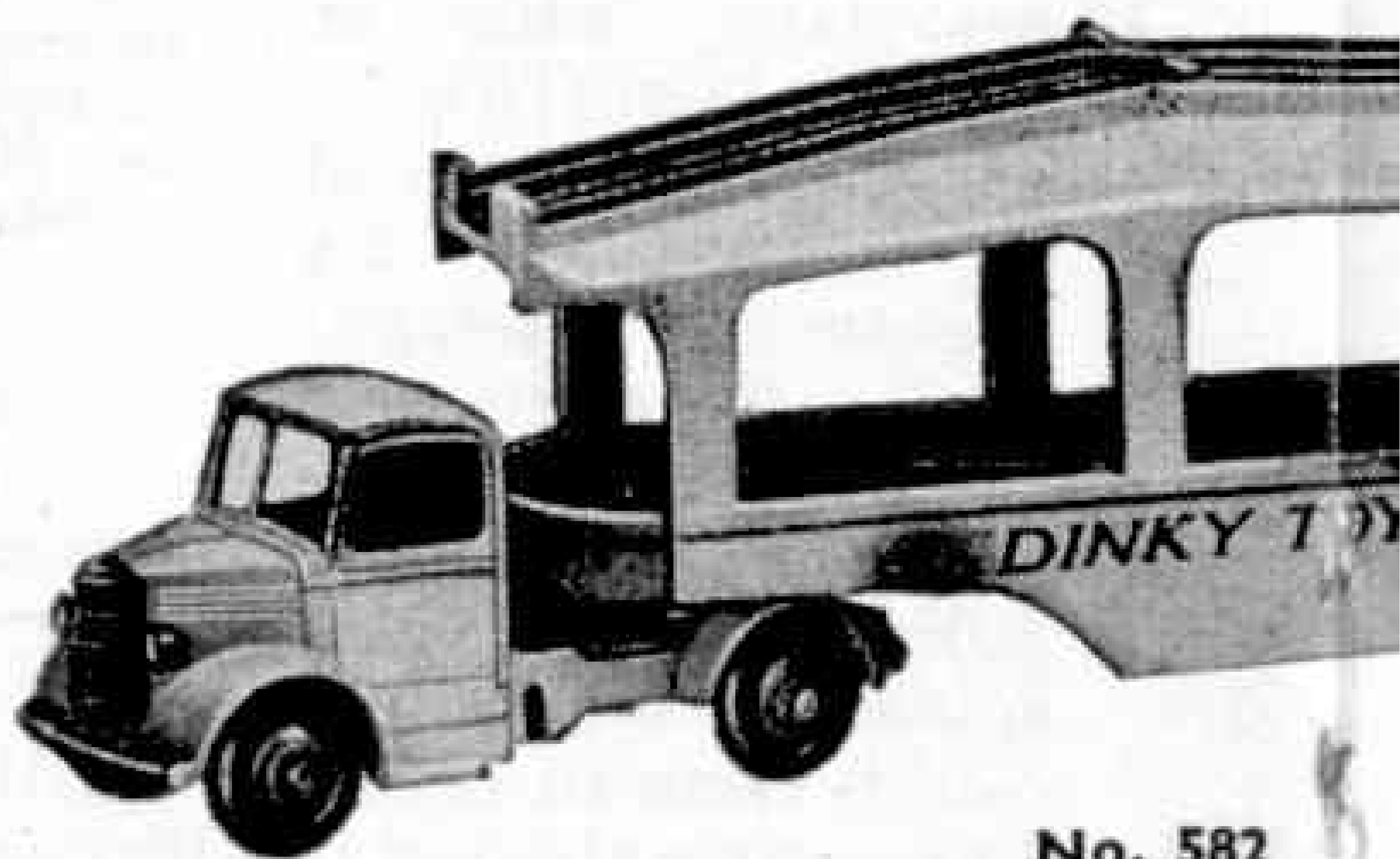
No. 30w
Electric Articulated Lorry
Length 5½ in.



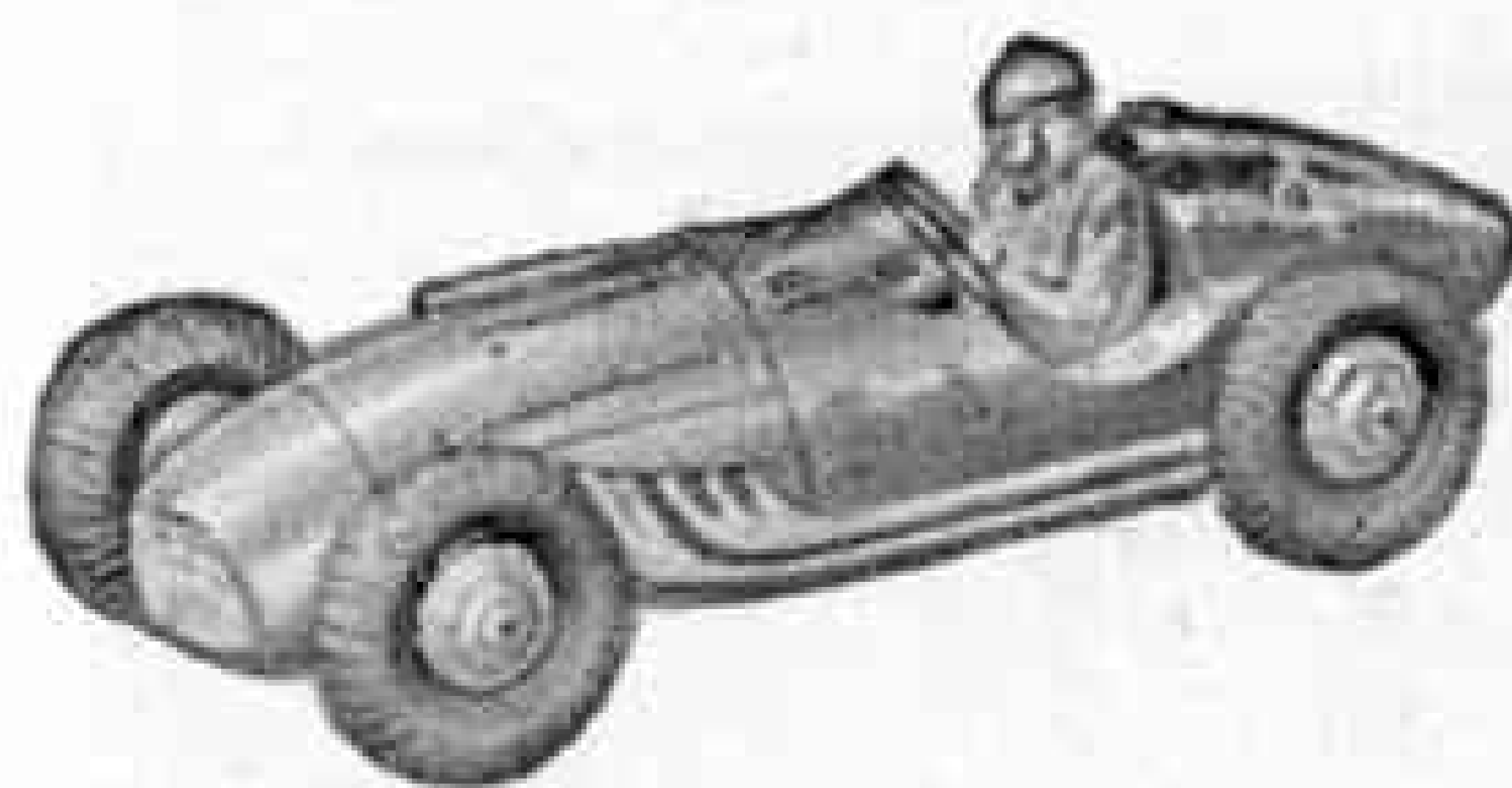
No. 27n
Field-Marshall Tractor
Length 3 in.



No. 673
Scout Car
Length 2½ in.



No. 582
Pullmore Car Transporter
Length with ramp raised



No. 23k
Talbot-Lago Racing Car
Length 4 in.



No. 23j
H.W.M. Racing Car
Length 3½ in.



No. 23
Maserati Racing Car
Length 3½ in.

all these yet ?

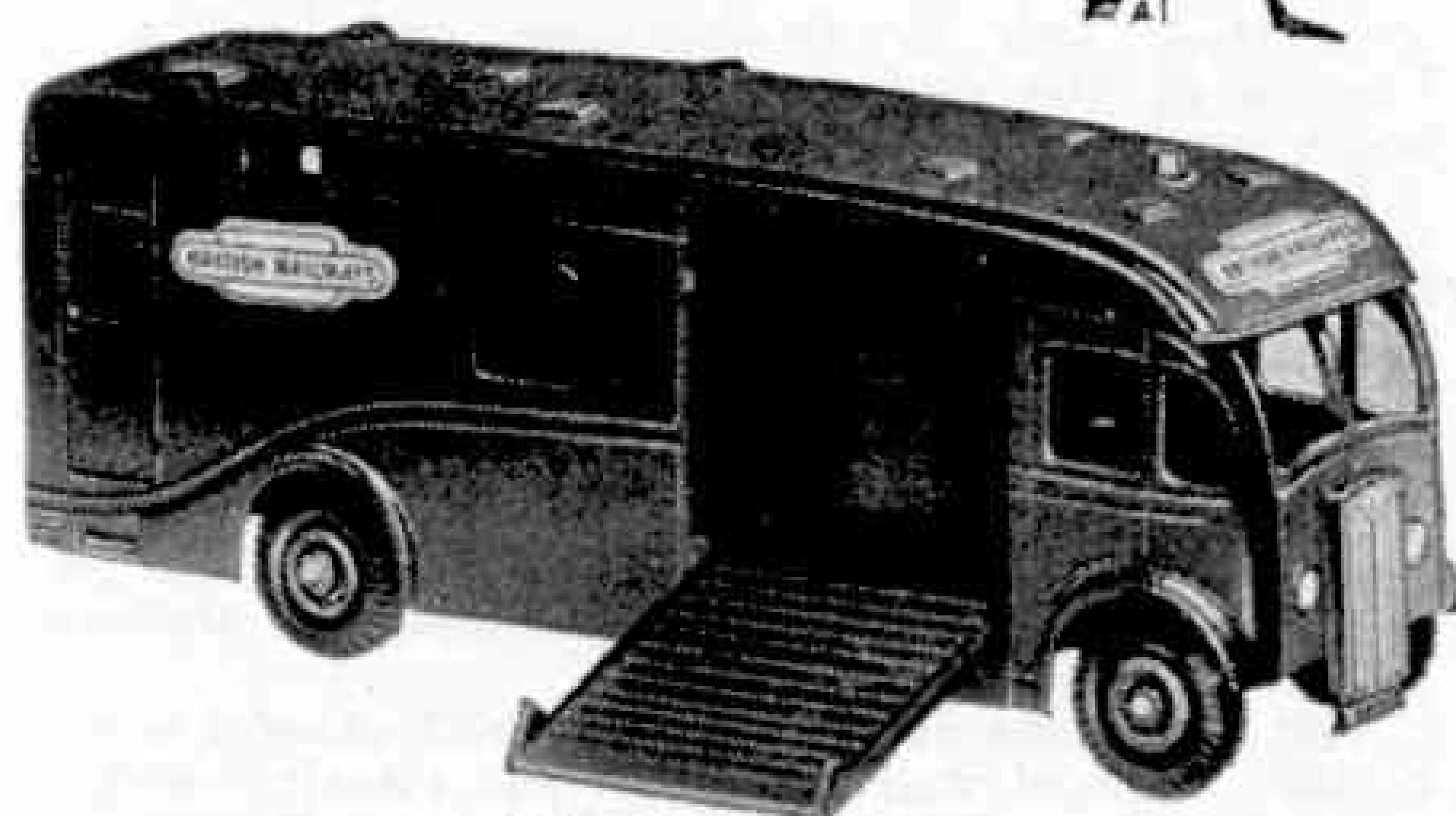
— asks TOYMAN



are the new Dinky Toys of 1953, except have you got them all yet? Whether you use them individually, or to use together on Dinky Toys layouts, or just to display in a cabinet for sheer pleasure, you cannot do without any of these additions

to your collection, as all of them have been introduced during 1953. Five of them are brilliant in their own colours of various countries. The rest are splendid for use on many different kinds of layouts, and I have constructed myself and have described them in the last few months. Many of you have enjoyed them, and I hope to hear more of your layouts, and make use of your Dinky Toys.

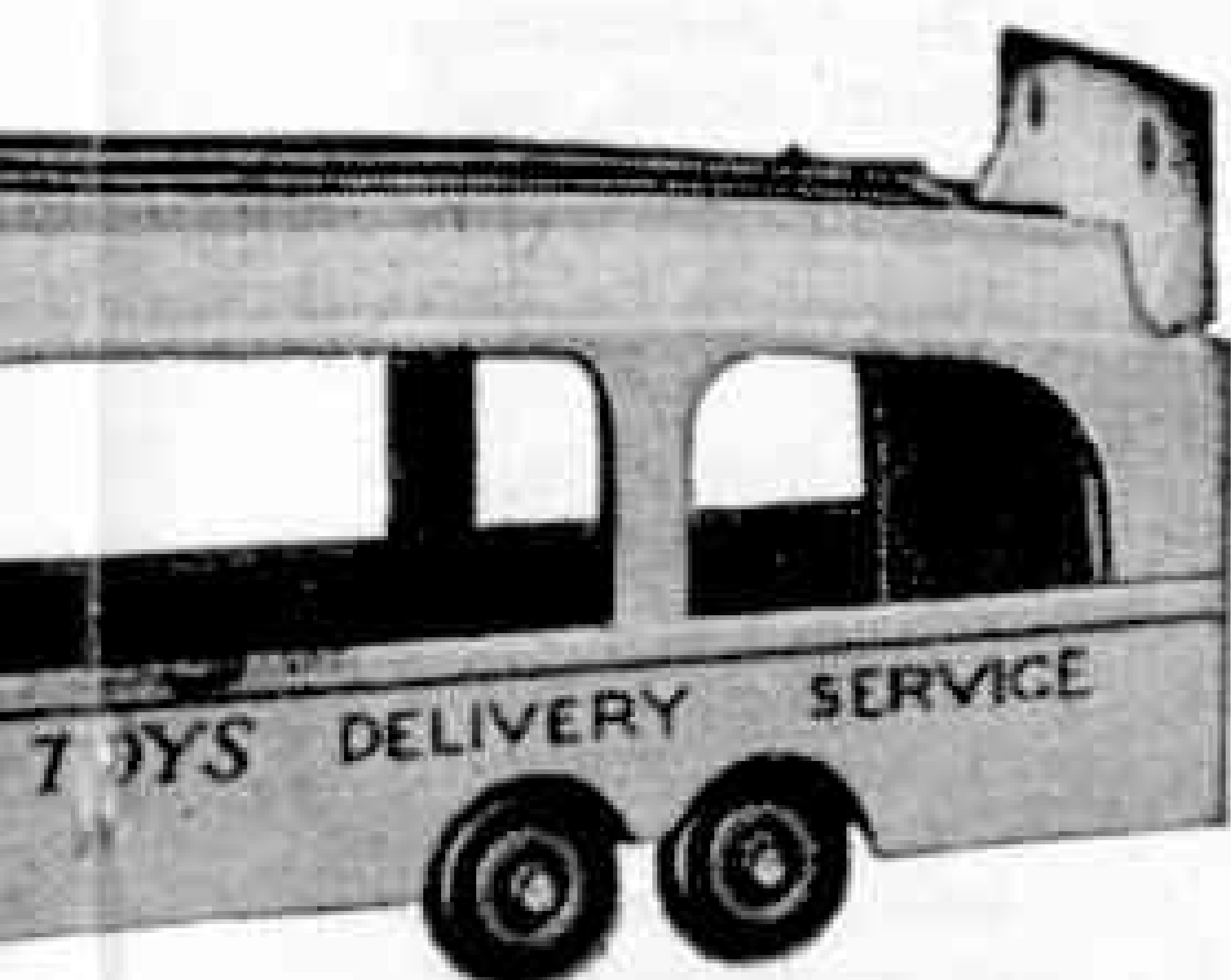
Next month, and I suppose that you all noticed it in the Christmas issue either. The reason for the Dinky Toys that are already in the market, it has been quite impossible as yet to supply you that during 1954 there will be added still further to the pleasure that these toys give you. So look out for them.



No. 581
Horse Box
Length 6½ in.



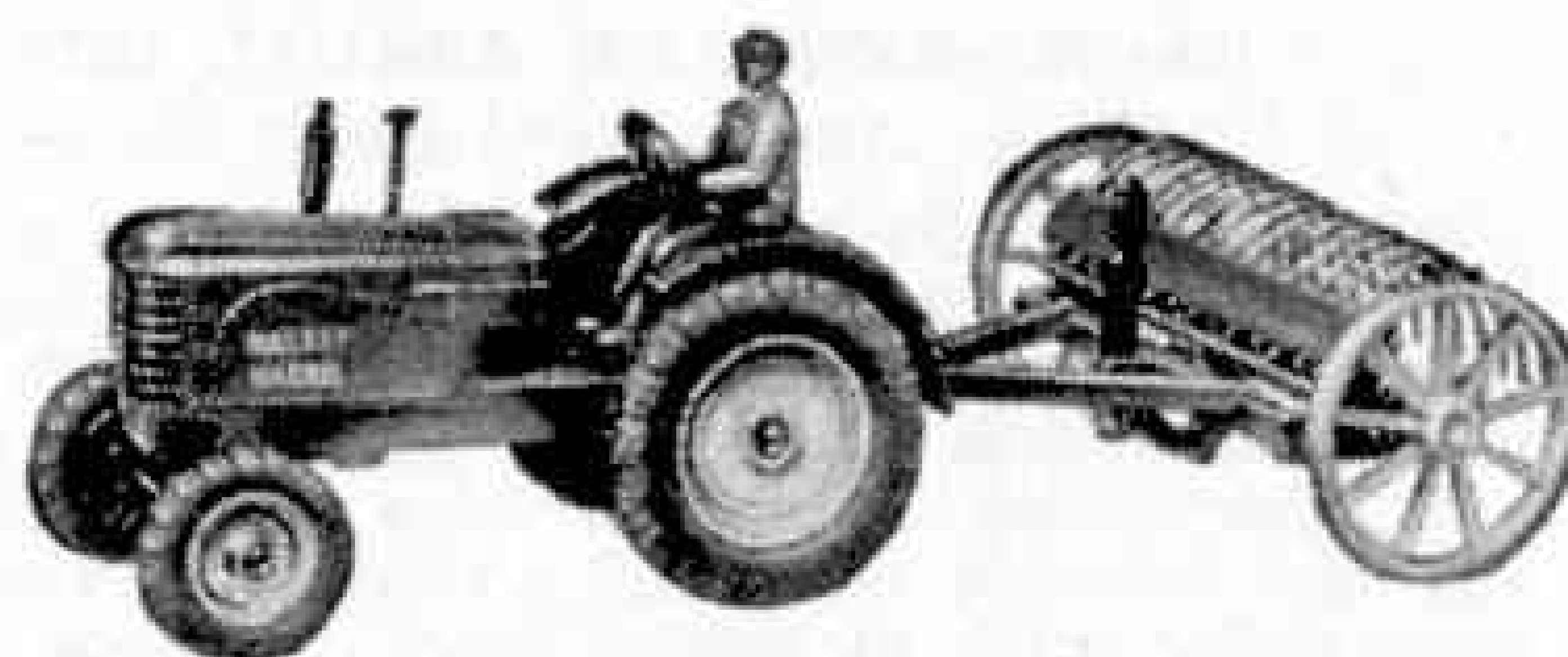
Leyland Cement Wagon
No. 533
Length 5½ in.



Transporter
raised 9½ in.



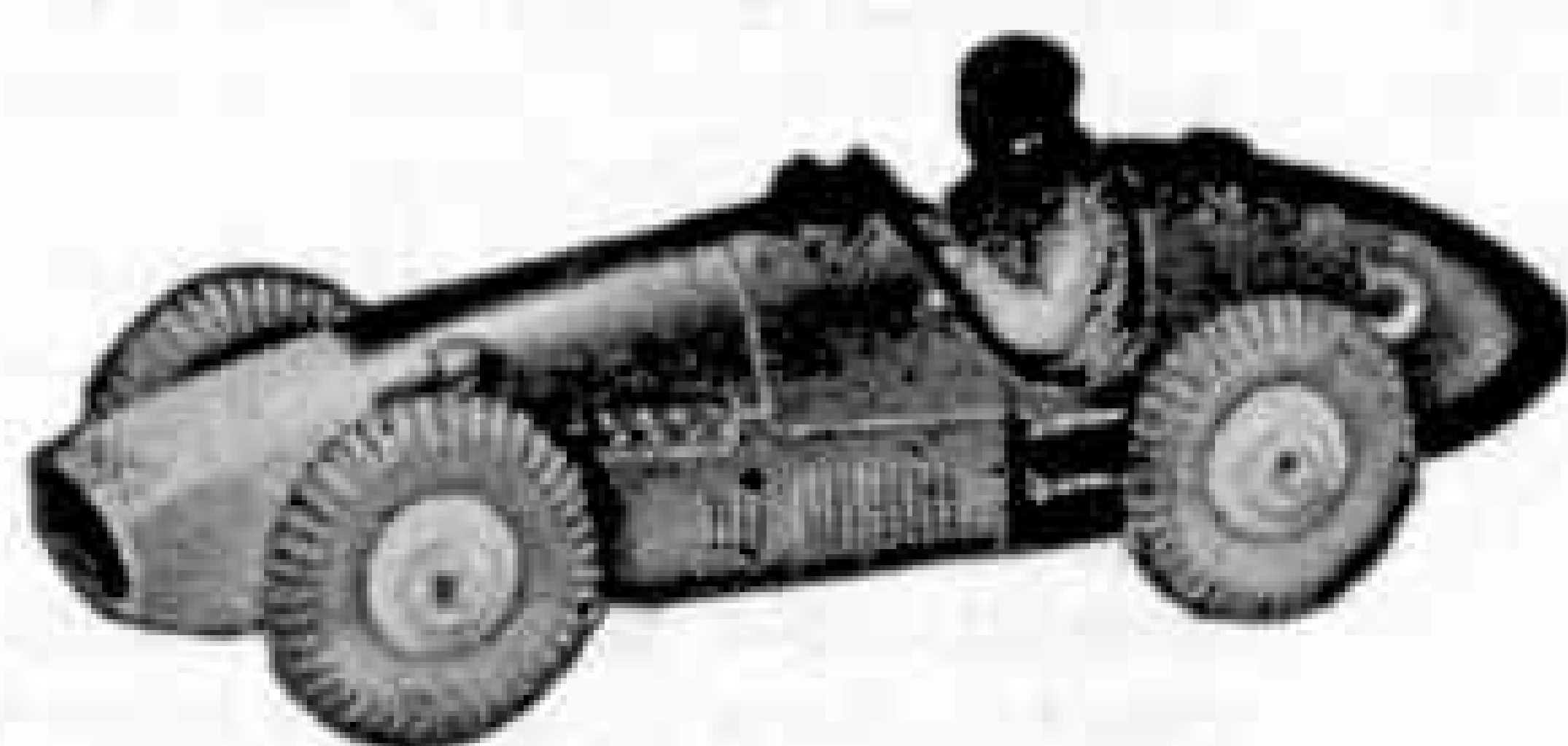
No. 40j
Austin Somerset Saloon
Length 3½ in.



No. 27ak
Massey-Harris Tractor
and Hay Rake
Length 6 in.



No. 23n
Racing Car
Length 3½ in.



No. 23h
Ferrari Racing Car
Length 4 in.



No. 23g
Cooper-Bristol Racing Car
Length 3½ in.

BOOKS TO READ

"THE MIDLAND RAILWAY"

By HAMILTON ELLIS (Ian Allan 25/-)

The Midland survived as part of the title of the L.M.S. and it remains today incorporated in London Midland Region, long after the company that it distinguished had ended its separate existence. When the Midland Railway was formed in 1844 as the result of amalgamation the name was apt enough, but in course of time its lines stretched outward to Carlisle and to Shoburyness via London, to Lincoln in the east and Bristol and Bath in the south west.

Furthermore, the Midland was concerned in more joint lines than any other company of its time and it was a partner in the three largest joint railways, the Cheshire Lines, the Midland and Great Northern and the Somerset and Dorset. It also acquired a dependency overseas through the purchase in 1903 of the Belfast and Northern Counties Railway, the intervening sea passage between the Midland port of Heysham and Belfast being performed by Midland-owned steamers.

The book aims at presenting a short general survey of the Midland and its activities, showing how it extended through the Peak district to Manchester, how it gained access to London and how it boldly forced its Pennine way of steel from Settle to Carlisle. And it tells us about the locomotives and trains that were provided for the various services almost throughout Midland history. It relates how third class passengers were allowed to travel by *all* Midland trains from 1872 and how second class was done away with in 1875. Throughout the remainder of Midland days Derby built stock was perhaps the most comfortable in the Kingdom. The company was the first to regulate the movement of traffic through train control offices, and it was the only line in Britain to make successful use of compound locomotives.

It will be realised that the Midland was a distinguished railway. The author tells its fine story in characteristic style, with plenty of illustrations, including two coloured plates and a folding map of the system.

"AEROMODELLER ANNUAL 1953"

(Model Aeronautical Press 10/-)

Interest in model aeroplane construction is probably greater today than ever before, and ranges from simple gliders to modern delta-wing jet aircraft. The sixth edition of this well-known Annual is packed with information and data of value to the aeromodeller, and the selection of model aircraft plans covers the same wide range as before, from Japanese PAAload winners to Polish tailless indoor models.

The aeronautical articles have been selected to reflect the year's trends and the possible interests of next season, so that such comparatively new departures as delta wings and delta canards are treated fairly thoroughly by an acknowledged expert. Radio Control, established at last with its own International Trophy, will be making even more progress in the next 12 months, and a valuable article on this subject is included.

There are, as usual, scores of excellent half-tone illustrations of model aircraft and numerous line drawings of plans, graphs, airfoil sections, etc.

"THE SMITH"

By F. W. ROBINS, F.S.A., F.R.G.S.
(Ryder 15/- net)

The days are almost gone when one can watch through the open door of the village forge as a blacksmith fashions a horseshoe, or some other article

of wrought iron. Once as we watched the sparks fly, and listened to the increasing roar of the fire as the bellows were plied, many of us were able to reflect on the work of the smith, whose craft is an ancient one that has given rise to many fascinating traditions.

The strange attraction that the work of the smith has for us makes this excellent book by Mr. Robins welcome. The author has contributed interesting articles to the *M.M.*, and here he shows himself to be a master of his attractive subject. From him we learn that throughout the ages the smith has been much more than a fashioner of horseshoes. He was really a master craftsman and in his way an artist, associated too with magic and mystery, as we gather from stories of magic swords and from the legends of the ancients and stories from Egyptian, Norse and Celtic mythology. On through the smith-saints and the mediæval smith, with his Guilds and Passion Plays, down to the gypsy smith and the village blacksmith of more recent days, the story is a full one, and as we read it we are not surprised when we learn that the author has visited every county in England and Wales and most of those in Scotland, in addition to travelling in 30 countries across the Channel, collecting material for this and other books.

The art of the smith is well illustrated by the frontispiece of the book, which shows the very beautiful gates made by William Edney, of Bristol, for the Church of St. Mary Redcliffe, and by the examples on six other full page plates.

"CAREERS FOR BOYS"

By J. G. WATTERSON, M.A.
(Ward Lock 12/6)

The choice of a career for any boy is a matter of the very greatest importance. This is more fully recognised today than at any previous time in our history, and every effort is made to see that boys are given some guidance in the choice of a career. Valuable information along these lines is given in this excellent book, and in it the various careers are treated in alphabetical order, covering practically the whole field of skilled employment, beginning with Accountancy and ending with Veterinary Surgery.

The author does not pretend that the contents of his book are exhaustive, but he certainly gives the broad outlines of the careers dealt with, which are those about which there are the most frequent enquiries, in sufficient detail to meet general requirements.

The book will be useful to any boy looking for ways and means of developing his skill and aptitudes to the best advantage, and parents too will find a study of its contents well worthwhile.

THE "SIMPLIFIED" STAMP CATALOGUE, 1954

(Stanley Gibbons 18/6)

This catalogue, now in its 19th edition, is without doubt one of the most popular published anywhere in the world. The reason for this is because it lists the whole world's stamps in one volume and its "simplicity"—the lack of differentiation between watermarks and perforations, the omission of errors and varieties, etc.—makes it specially useful for thematic collectors.

This year, for the third year running, the selling price of the volume remains unaltered, although it contains 46 more pages. The first of the Queen Elizabeth issues will be found in it but the flood of foreign new issues is chiefly responsible for the extra pages. New countries represented are Papua and New Guinea, Rajasthan and Ryukyu Islands.

The catalogue can be obtained from stamp dealers, or direct from Stanley Gibbons Ltd., 391 Strand, London W.C.2 postage 1/2, abroad 1/6.

"THE WORLD'S GREAT BRIDGES"

by H. SHIRLEY SMITH (Phoenix House 15/- net)

There is perhaps no great engineering work that gives so much satisfaction, to both those who build it and those who just admire, as a great bridge, and any book that illustrates the world's famous bridges, and explains how they were constructed, cannot fail to be of interest, provided it is authentic. Mr. Shirley Smith is himself a leading British bridge builder, and his survey bears ample evidence of expert knowledge of these structures, while at the same time it gives some idea of the thrills and excitements of the engineer as he watches the structure he has planned growing before his eyes.

The author begins with the most ancient of all known bridges, and the most primitive, which surprisingly enough gives him the opportunity of classifying these

that no one can have seen all the world's great bridges. It has been his good fortune to visit the majority of those that are standing, and to work on the design or erection of the longest single spans in India, Africa and Australia; and for its wealth of information, its accuracy and its liveliness and wide scope, his book is one that can be thoroughly recommended to any boy interested in the achievements of the engineer.

"MY TRAINS BOOK"

(Ian Allan 5/-)

This is a book for the younger enthusiasts, who will learn quite a lot from it about railways, trains, engines, stations, bridges, signals and so on. It is simply written and, what is more, it includes one or two amusing stories, with quiz and puzzle features that will arouse the interest of youthful readers. There are plenty of pictures to catch the eye, many

in colour and others in the form of attractive sketches.

For a youngster the book is attractive and it will no doubt give much pleasure to many budding railway enthusiasts.

"THE OBSERVER'S BOOK OF AIRCRAFT"

(Warne 5/-)

The first edition of this excellent book, reviewed in the December 1952 *M.M.*, was so successful that it had to be reprinted three times within six months of its initial appearance. But so many new aircraft and improved variants of established types have appeared since the first edition was prepared that it has been necessary to revise it completely.

Naturally there is a limit to the number of aircraft that can be described in detail in a work of this handy size, but it is claimed that the scope of this new edition is greater than that of any comparable publication, including as it does new

photographs, silhouettes of the highest standard of accuracy, and text giving a wealth of detail of the aircraft of eight nations. The aircraft have been arranged by shape and size to aid quick reference.

There is a list of international civil aircraft markings and an excellent index.

"TWO REIGNS" POSTAGE STAMP CATALOGUE, 1954

(Stanley Gibbons 4/-)

As the publishers forecast in their introduction to the last "K.G. VI" Catalogue, the majority of collectors of modern British Commonwealth stamps are treating the successive reigns as a continuous period, and hence it is natural to include issues of both King George VI and Queen Elizabeth in one volume, which now comes to us in an attractive black and purple two-profile cover design.

The contents are appreciably more up-to-date than those of the latest "Part I," and there has been the opportunity of completely rechecking prices of K.G. VI stamps to give the very latest quotations. For those collectors who do wish to make a distinction between the reigns, or to collect only one or the other, dividing lines have been placed in the lists.

A special interleaved edition, price 7/6, also is available and will be extremely useful for those who wish to make notes or paste in supplements from *Gibbons Stamp Monthly*. Postages on the two editions, if obtained direct from the publishers, 391 Strand, London W.C.2, are 3d. and 6d. respectively.



This illustration, reproduced from "The World's Great Bridges," reviewed on this page, shows the 4,200 ft. span of the Golden Gate Bridge, San Francisco, the longest span in the world today.

structures in a general way. From the great bridges of ancient times he passes on to those of the Romans, and the less familiar but absorbingly interesting structures of Persia, China and Japan, before describing the wonderful bridges of the Middle Ages, many of which have become famous in history and legend. It is impossible to mention here all the great bridges to which the author refers, but one that cannot be omitted is the first London Bridge, which was begun in 1176 and completed in 1209. It is very gratifying to find that such an excellent account is given of this famous bridge, with drawings that illustrate its interesting construction.

The author's field expands when we reach the era of the modern bridge, the birth of which he places in the 15th and 16th centuries. He travels all over the world in order to give examples of the art of the bridge builder, and there are splendid stories of the building of British bridges overseas, including the Sydney Harbour Bridge, the Quebec Bridge and other equally fine examples, as well as of more familiar bridges such as the Forth and Tay Bridges and the masterpieces of Telford, Rennie and Stephenson. All types of bridges are considered, the last four chapters dealing with those of reinforced concrete, cantilevers, big steel arches and the mighty modern suspension bridges of the United States.

The illustrations are fully up to the standard of the story that Mr. Shirley Smith tells. They include reproductions of 43 bridge photographs and 24 specially made line drawings. The author himself points out

Air News

By John W. R. Taylor

Lifeboat-Carrying Bomber

One of the highlights of last year's S.B.A.C. Flying Display at Farnborough was John Baker's fly-past in the Avro Shackleton MR. 2 Coastal Command reconnaissance-bomber. It had a big airborne lifeboat suspended from a hook in its bomb-bay, but this seemed to have little effect on its manoeuvrability, and the Shackleton cruised past, 100 ft. above the runway, on only one of its four Griffon engines.

The lifeboat it carried was of the latest Saunders-Roe Mk. 3 type, complete with a small tailplane at its rear end to deflect the boat clear of the aircraft's radome and tail during release. A cluster of large parachutes lowers it gently into the sea.

Canadian Missile

A Canadian-designed air-to-air guided missile has been tested by firing it at a stationary target, from a Sabre fighter. Developed by the Canadian Armament and Research Establishment at Valcartier, Quebec, it weighs 250 lb. and can be guided by internal radar scanners to hit targets over a range of 2,000 ft. A batch of 100 of the missiles will be built for service tests before they are put into full-scale production to arm the R.C.A.F.'s Sabre and Avro Canada CF-100 fighters.

The McDonnell Demon

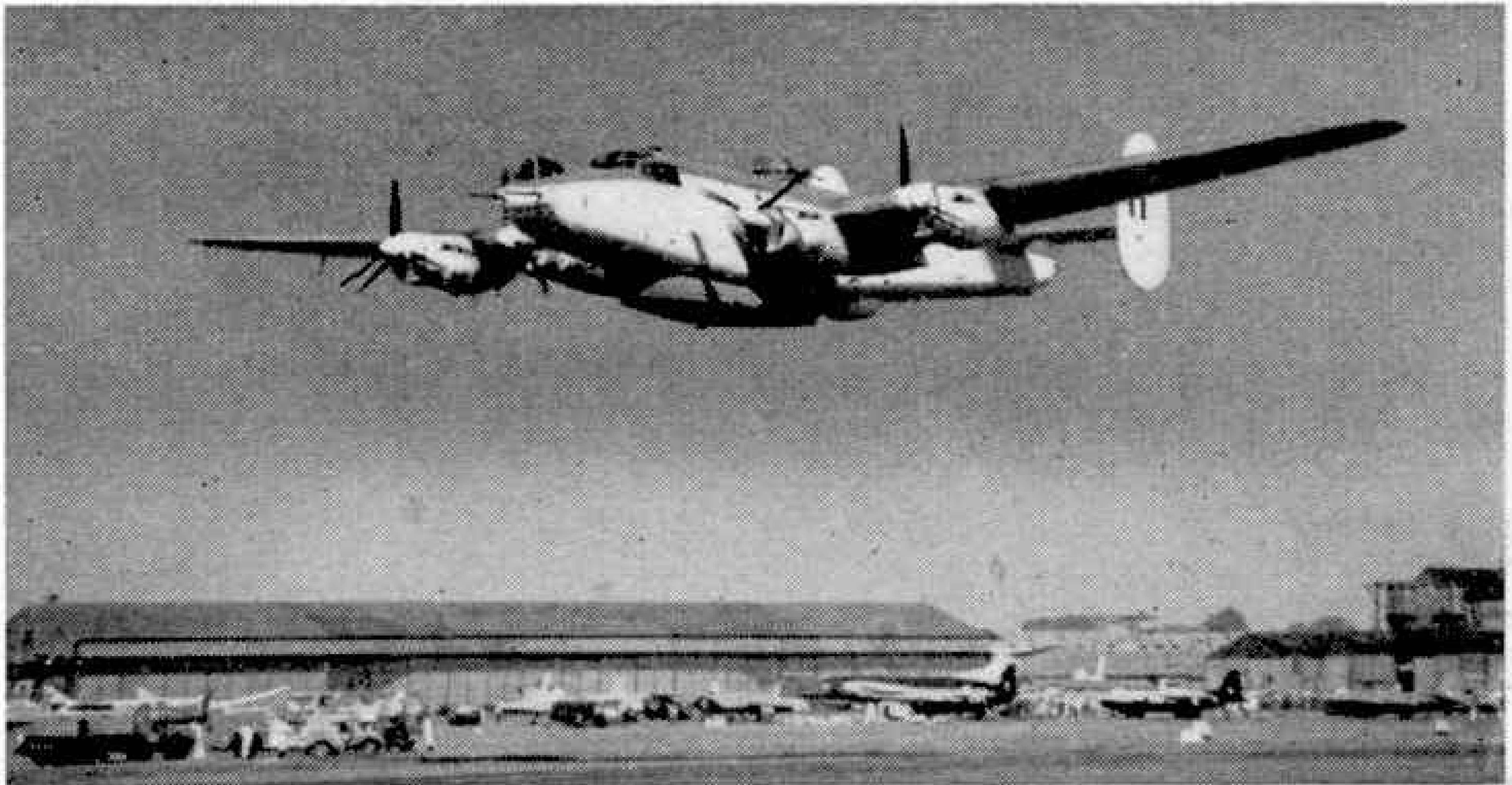
Although the McDonnell XF3H-1 Demon deck-landing fighter first flew in August 1951, it was two years before the U.S. Navy allowed any good photographs of it to be published. One of them appears on this page, and shows many unusual features of this fast single-seater, which is just beginning to enter squadron service.

Most striking feature is the way its tail is carried

on a stalky boom above and behind the jet tailpipe. Its sharply swept wings have full-length leading edge slots to improve controllability at low speeds, and its ailerons are set a long way in from the wing tips. The prototype has a Westinghouse J.40 turbojet, but it is possible that production Demons and Douglas Skyrajs will have Rolls-Royce RA.14 Avons, following a recent Rolls-Royce-Westinghouse licensing agreement. About 35 per cent. of the Demon's components are built for McDonnell by the Temco Aircraft Corporation.

Aerial Blitz on Eagles

Australian farmers are using aircraft to shoot



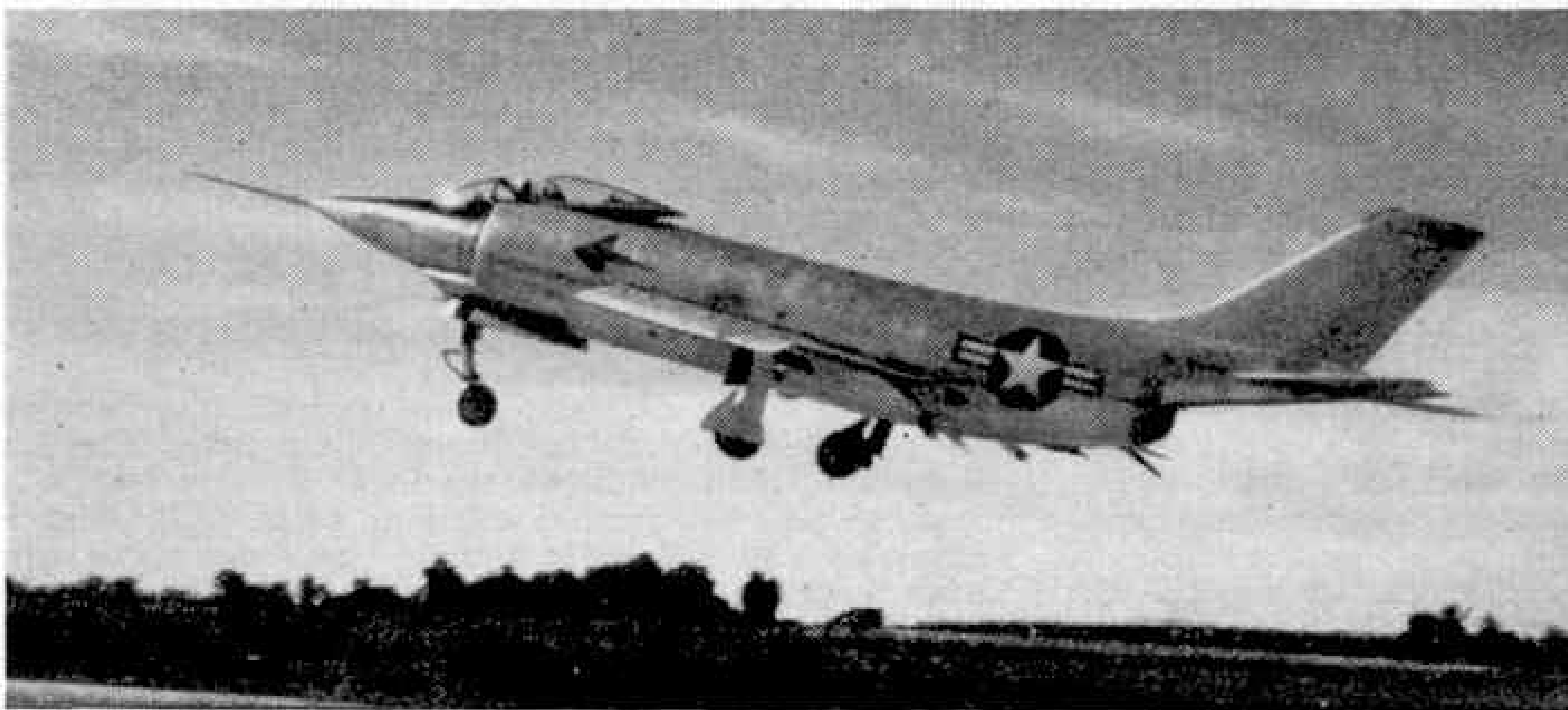
One of R.A.F. Coastal Command's Avro Shackleton 2 reconnaissance-bombers with a large air/sea rescue lifeboat suspended from a hook in the bomb-bay, and three engines stopped. Photograph by courtesy of Shell Petroleum Co. Ltd.

down wedge-tailed eagles, which have caused havoc in the big sheep-runs of New South Wales for many years. Rifles fired from the ground proved ineffective, so an enterprising farmer engaged one of the best marksmen in the district and sent him aloft with a shotgun to hunt for wedge-tails, which are among the largest and most destructive of all eagles. Two were found and one shot down; so other farmers quickly joined in the hunt. It is expensive, but not so expensive as losing sheep when wool prices are high.

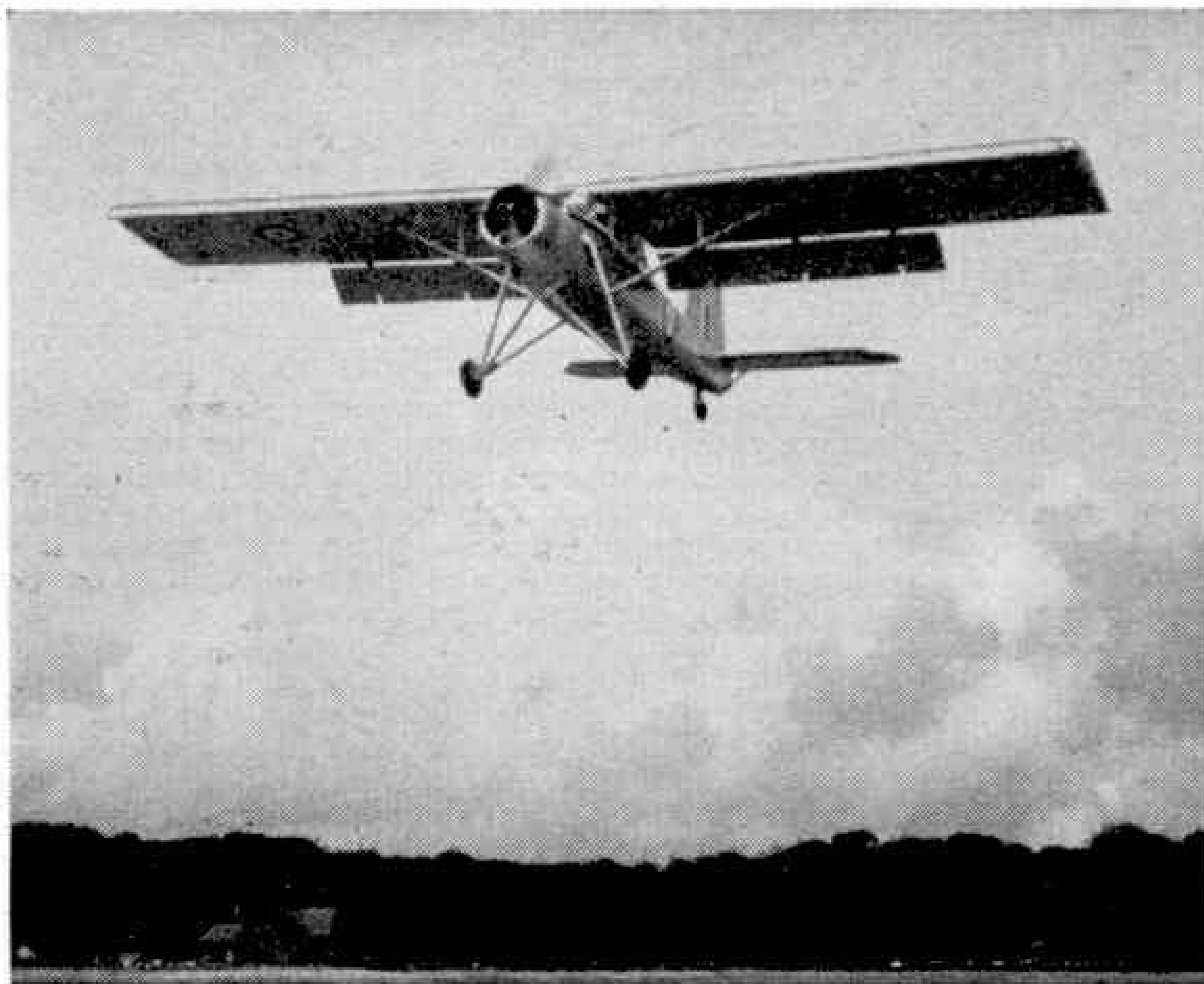
Air-Shipping Link-up

Another important piece of news from the British "independents" is that Huntings have gone into partnership with the famous Clan Line shipping company to form a new £1,000,000 company called Hunting-Clan Air Holdings Ltd.

The new concern will operate Hunting Air Transport and its associated company, Field Aircraft Services, who were awarded a £700,000 contract by the U.S.A.F. last year to overhaul American military Dakotas based in Europe. Air services operated by Hunting-Clan will include a network of internal



The McDonnell XF3H-1 Demon, the U.S. Navy's latest single-jet fighter. Photograph by courtesy of McDonnell Aircraft Corporation, U.S.A.



Prestwick Pioneer, showing off its slotted and flapped wings. Photograph by courtesy of Scottish Aviation Ltd.

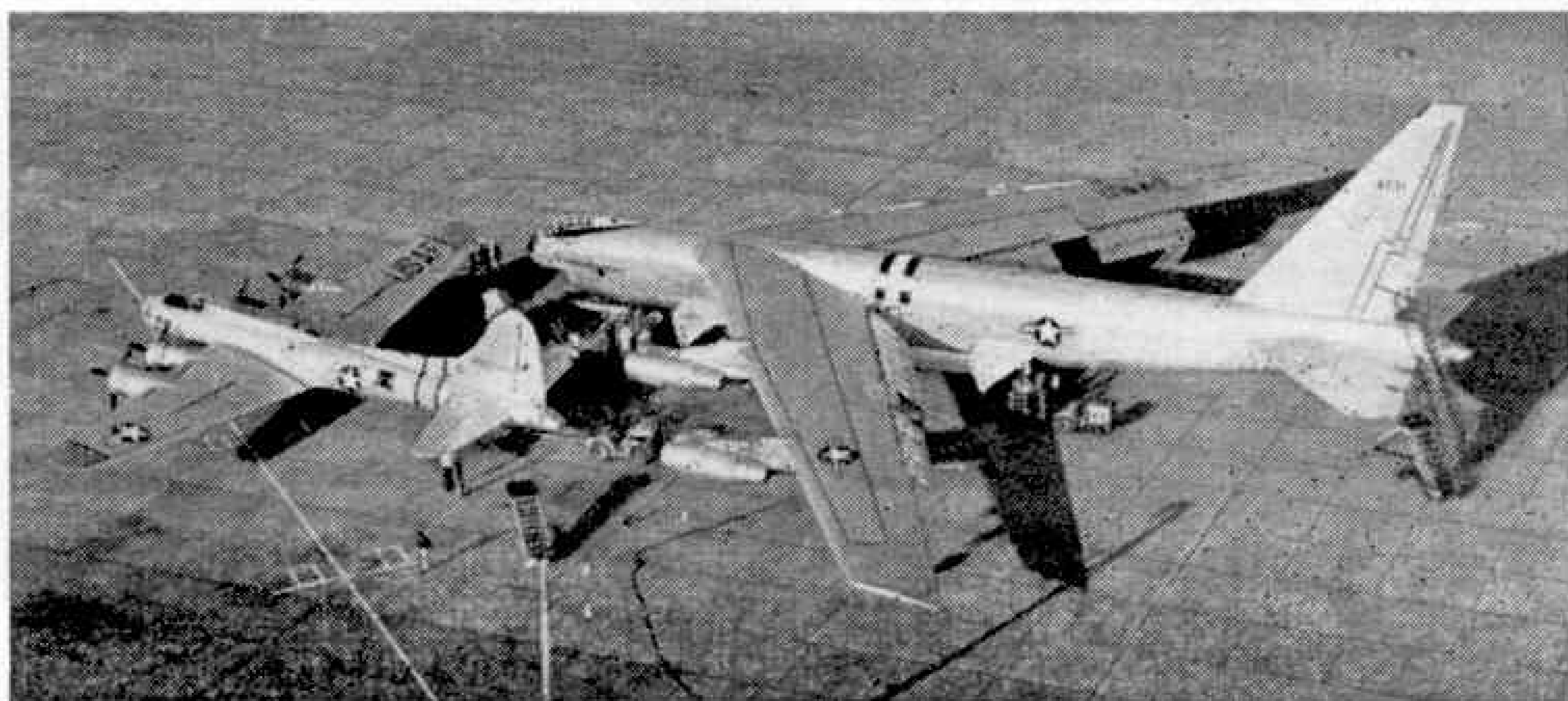
and international routes based on Newcastle, the famous *Safari* tourist class service to East and Central Africa, and a trooping service from Britain to Malta and Gibraltar, which involves carrying a minimum of 30,000 passengers a year. The airline's present equipment of Dakotas and 31-34 seat Vikings will be supplemented soon by Vickers Viscount turboprop air liners—the first gas-turbine aircraft ordered by any independent airline.

Pioneers in Malaya

The Royal Air Force have ordered a small number of Prestwick Pioneers for service in Malaya. Two had been assembled at R.A.F. Station Seletar by the beginning of last October and two more were due to arrive by the end of the year. They will be used for communications and casualty-evacuation duties from airstrips used in the fight against Communist bandits.

It would be difficult to find a better aircraft for the job, as the big slots and flaps on the Pioneer's plank-like wing give it an incredible take-off and landing performance. It rivals the helicopter in this respect, and its initial and maintenance costs are very much less than those of a helicopter. Powered by a 550 h.p. Alvis Leonides engine, it will cruise for 400 miles at 120 m.p.h., carrying up to five people.

Boeing B-52 Stratofortress, the U.S. Air Force's newest, largest and fastest heavy jet bomber. This huge aircraft completely dwarfs the Boeing B-17 Fortress bomber, of World War II, beside it. Photograph by courtesy of the Boeing Airplane Co., U.S.A.



Germany to Resume Airline Operations

Germany will resume airline operations in the Spring, with a company that may be named Deutsche Lufthansa, after its famous pre-war counterpart. Its initial fleet will include four Convair 340s and four Super-Constellations, which will be used on services linking Germany with Paris, London, Rome, Cairo and, later, North and South America.

U.S.A.F. Orders

The new Boeing B-52 Stratofortress heavy bomber and North American F-100 Super Sabre fighter have emerged so successfully from their service testing that the U.S.A.F. have completely revised their production programmes to get the new types into service as quickly as possible.

Several hundred B-52s are to be built, compared with an original order for only 70 RB-52A reconnaissance-bombers. Initial production will be four a month at Boeing's Seattle factory, and it is expected that the B-52 will replace the B-47 on the assembly line at Wichita in about 15 months' time.

Priority has been given to F-100 production at North American's Inglewood plant, where orders worth nearly £100,000,000 will cover construction of about 25 aircraft a month. Present orders for 175 F-86F Sabres, 400 F-84F Thunderstreaks and 169 B-47 Stratojets have been cancelled in consequence.

Radar Map for Fighter Pilots

Jet pilots of the future will be able to see where they are at a glance, on a new radar-controlled map developed in Britain by the Decca company. It is basically a lightweight version of the Decca Flight Log, which B.E.A. use to navigate their Viscount air liners, and consists of a small box housing a transparent map. As the aircraft moves through the air, a line appears on the map, tracing its track over the ground. At any moment, the pilot can check his progress by glancing at this track line, which gives his precise position, with no time lag and unaffected by wind changes.

The brain of the system is another small black box, which picks up signals from a chain of Decca stations on the ground, and fixes the position of the aircraft relative to them. It will relieve the fighter pilot of much of the problem of navigating his aircraft, leaving him free to concentrate on flying it and searching for the enemy. Total weight of the installation is only 15 lb., and it is equally suitable for other small aircraft such as helicopters.

From Our Readers

This page is reserved for articles from our readers. Contributions not exceeding 500 words in length are invited on any subject of which the writer has special knowledge or experience. These should be written neatly on one side of the paper only, and should be accompanied if possible by original photographs for use as illustrations. Articles published will be paid for. Statements in articles submitted are accepted as being sent in good faith, but the Editor takes no responsibility for their accuracy.

KING EDWARD III CHAPEL

One of the most interesting little structures in England today is the Chantry Chapel on the old Wakefield Bridge, which crosses the Calder. At one time chapels built on bridges could be found in many parts of England, but today very few remain.

Wakefield's Chantry Chapel is one of the oldest and last of its kind of which we have any account.



The Chantry Chapel on the ancient bridge across the Calder at Wakefield.
Photograph by J. Moore, Wakefield.

It is said to have been built for the purpose of prayer, to be offered for the souls of those slain in the Battle of Wakefield, in the reign of Henry VI, but the architecture and ornamentations suggest an earlier date, and actually it was founded in 1357 by the townsmen of Wakefield.

One of the questions most frequently asked is, "Why a chapel on a bridge?" It is suggested that it acted as a support for the bridge itself. Alternatively, it was a place of residence for one or more priests, who would solicit alms from passengers over the bridge to pay for its maintenance. A chapel also could guide and direct travellers or navigators on the river. For this purpose, lights or beacons were placed on the low round tower, which can be seen in the photograph. This beacon tower is reached by a very narrow spiral staircase which rises from the Crypt.

Although built as a Chapel, and now serving as one, history tells us that the building has been put to other purposes. For example, it has served as an old clothes shop, a warehouse, a den of flax-dressers, a news room, a cheese-cake house and a tailor's shop. Incidentally, although one can still use the old nine-arched bridge, no traffic crosses it, as there is a new bridge running parallel to it fifty yards away. The old bridge, with its chantry chapel, is an interesting reminder of Wakefield's historic past.

J. MOORE (Wakefield).

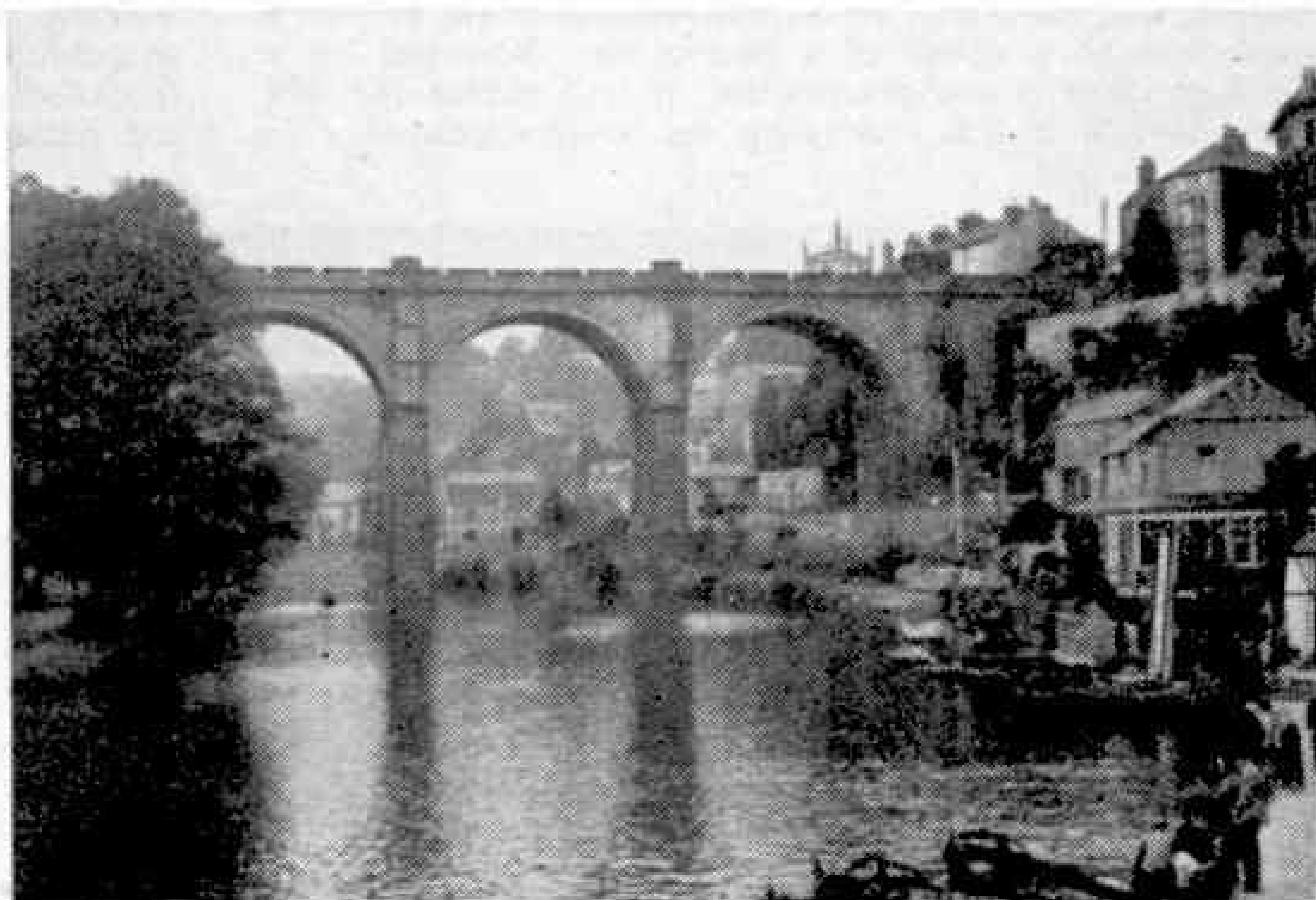
A MASSIVE VIADUCT

The imposing railway viaduct shown in the accompanying illustration is built over the river Nidd, at Knaresborough, in Yorkshire. Its massive stone arches, 90 feet high and 300 feet in length, make a delightful framework for the quaint and picturesque town standing on the high sloping banks of the river, and topped by the ruins of its historical castle. Knaresborough, a town of many legends, is said to be the birthplace of Mother Shipton, the prophetess whose supernatural powers made her a famous figure. It is also the home of the famous Dropping Well, the waters of which cover with stone articles immersed in them.

The East and West Yorkshire Junction Railway, formed in connection with the Leeds and Thirsk Railway line, afterwards amalgamated with the N.E.R., was begun in 1847. Its line was carried under part of the town of Knaresborough and then over the river Nidd by the viaduct, which was started in the same year. In 1848, when this was nearly completed, the whole mass of structure and scaffolding fell into the river below owing to faulty construction of the pier foundations.

On whatever side the railway entered the vast Forest of Knaresborough, it had to do so by means of a series of deep cuttings and tunnels through the hills, and lofty viaducts with massive arches, such as this one, stretching across the valleys. But none is so impressive as that in Knaresborough, whether seen from below, as in the accompanying photograph, or from the road bridge a little higher upstream.

V. HALLAM (Harrogate).



The railway viaduct across the Nidd at Knaresborough. Photograph by Vicky Hallam, Harrogate.



Club and Branch News



WITH THE SECRETARY

A NEW YEAR RESOLUTION

First I wish all members of the Guild and H.R.C. a very happy and prosperous year in 1954. This is the time to look ahead, and I suggest that every member makes a New Year resolution to do all he can to increase the strength of whichever of these organisations he belongs to—and they have much in common.

The aim of the Guild and H.R.C. is to make life happier and brighter for its members, and, by providing the right sort of opportunities, to develop their initiative and enterprise. Every Guild and H.R.C. member who has not yet joined a Club or Branch should contact the nearest without delay, and thus discover for himself how much greater fun it is to enjoy his favourite hobby in the company of other boys of like interest. Those who are already members should resolve to introduce at least one friend to the joys of Club or Branch life, and so help to strengthen the organisations to which they themselves belong.

BRANCH RECENTLY INCORPORATED

No. 547—AVIARY (LEEDS)—Mr. Ken Myers, 34 Aviary Row, Armley, Leeds 12.

CLUB NOTES

LEADGATE AND DISTRICT M.C.—Meetings have been devoted mainly to model-building, during which members have been engaged on the construction of a motor car chassis and 0-6-0 tank locomotive, and a model lathe largely designed by the Leader, Mr. Goodrum. A Meccano Parts Quiz has been a popular feature at recent meetings. Stories written by the Leader have been read to, and much enjoyed by, the members. Club roll: 7. *Secretary*: J. N. Barron, 4 Garden Place, Leadgate, Co. Durham.

CRYPT GRAMMAR SCHOOL (GLOUCESTER) M.C.—The Cup for the competitions of the past year, won by R. Chamberlayne, was presented to him at the General Meeting that marked the opening of the present Session. New members have been enrolled. The subject of a recent model-building contest was *Commercial Vehicles*, and some excellent models were built. Club roll: 44. *Secretary*: R. J. H. Carter, Red Roofs, Barnwood Avenue, Gloucester.

EXETER M.C.—More new members have been enrolled. The Club has moved to new quarters and meetings are now held in Ladysmith S.M. Boys School. Models recently completed have included a rocket ship, water mill, lorry and trailer, crane, and a model of H.M.S. *Eagle*. Club roll: 35. *Secretary*: R. Hawkins, 15 College Road, Exeter, Devon.

COPDOCK AND WASHBROOK M.C. —

The current programme includes Meccano model-building, model aeroplane construction, fretwork and photography. Club roll: 12. *Secretary*: K. E. Whitten, The Street, Copdock, Nr. Ipswich.

INDIA

MYSORE M.C.—The excellent Meccano and Hornby Trains display staged by this Club at the Mysore Dasara Exhibition was much praised by visitors. They included the Minister of Education, Mysore State, who asked many questions about the Club. Club roll: 12. *Secretary*: M. N. Radhakrishna, 1096 Chamaraja Puram, Mysore, India.

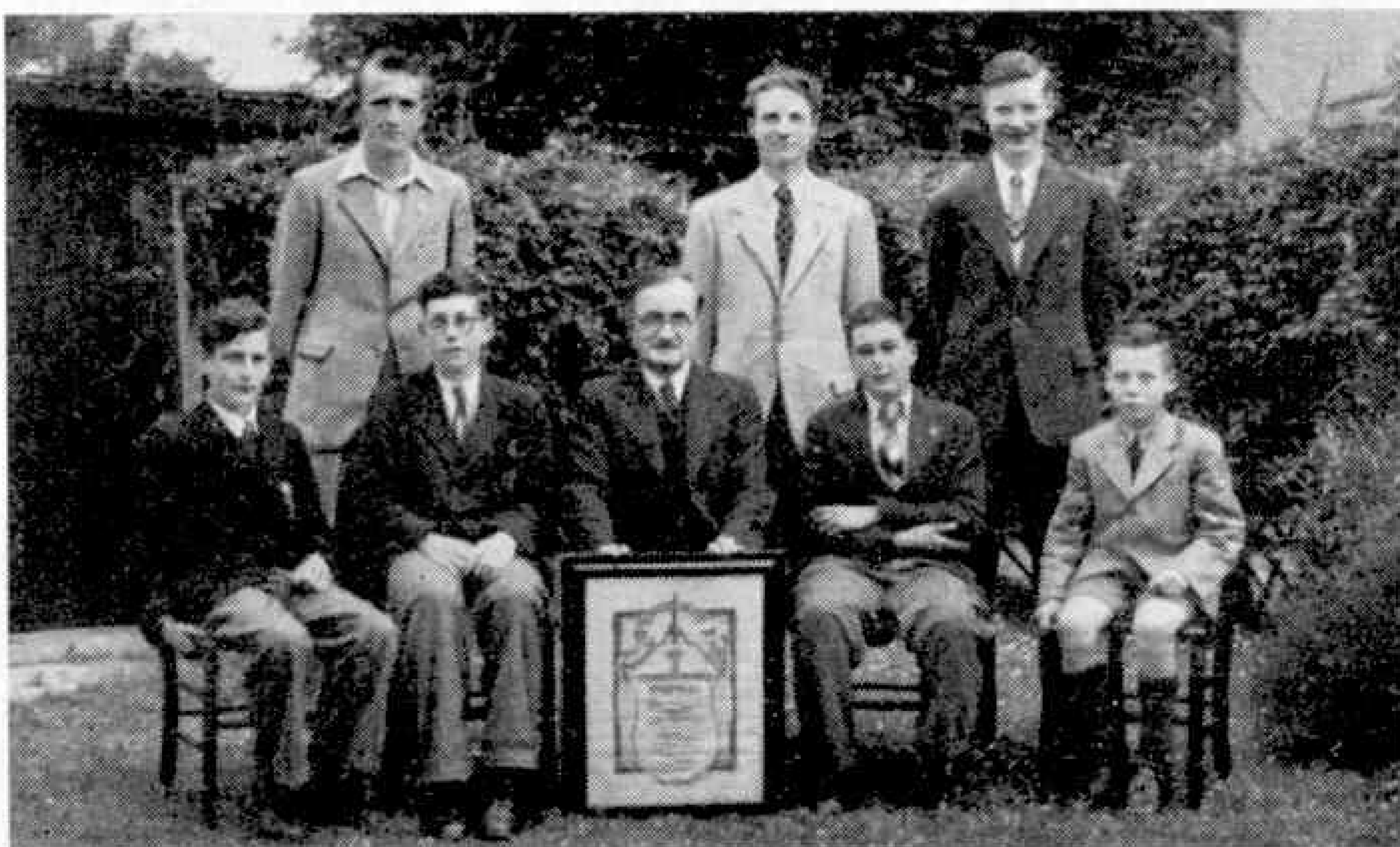
BRANCH NEWS

AVIARY (LEEDS)—This recently incorporated Branch is now well into its stride, and recent activities have included a visit to Leeds (City) Station to see the interesting "Royal Journey" Exhibition. A "Locomotive Driving" competition, planned to find out which member is most capable of handling the railway system, resulted in a tie between the Secretary and F. Miller. A small library has been started. *Secretary*: P. Foster, 3 Aviary Street, Armley, Leeds 12.

HINDHEAD AND DISTRICT—The Branch staged an excellent display at the recent Autumn Fair organised by the Tower Road Church, Hindhead. A novel feature was a Hornby-Dublo tank engine with its casing removed to show the slowly running mechanism. The engine was mounted on wooden blocks to keep it stationary. More recently members have been preparing for an ambitious Branch display at the local Hobbies Exhibition. *Secretary*: B. J. Hinde, "Hindhead Brae," Hindhead, Surrey.

NEW ZEALAND

HASTINGS—Track operations are the main feature of the frequent Branch meetings. A visit to a Mr. Tonks to inspect his model railway layout was greatly enjoyed. *Secretary*: I. Mison, 705 Tamatea Street, Hastings, New Zealand.



A happy group of some of the members of the Hornsea M.C., with Mr. R. W. Shooter, Leader, in the centre of the front row. Mr. D. Stevenson, the enthusiastic and industrious secretary, is on the right in the back row. This long-established and most successful Club maintains a high standard of model-building. Indoor games and lectures also figure largely in the Club programme.

Among the Model-Builders

By "Spanner"

A SELF-CHANGING GEAR-BOX

Figs. 1 and 2 on this page show another variation of the three-speed gear-box, to add to the many already described in past issues of the *M.M.* The one illustrated here, however, is a self-changing type, and it was designed by R. M. Minshull, Macclesfield.

Readers who wish to build this mechanism should begin by bolting together two $2\frac{1}{2}$ " Flat Girders through their round holes. The bolts joining the Flat Girders

which is held by two nuts in a $2\frac{1}{2}$ " Strip. The Strip is attached to the framework by Angle Brackets. A $3\frac{1}{2}$ " Rod is supported in the Double Angle Strip 3, and a $\frac{3}{4}$ " Pinion on the Rod engages the Pinion 5 on the input shaft. A Worm on the Rod drives one of the Pinions 19.

The mechanism is set by pushing the Rod 15 to the right (Fig. 1) and then turning the Screwed Rods until they just touch the Rod 15. The gear-box is then in bottom gear, and the Rod 15 is prevented from moving to the left by the Screwed Rod catching against the Cord Anchoring Spring 16. When the model is set in motion, the Screwed Rods rotate slowly, and gradually the Cord Anchoring Spring is released. The Rod 15 is then forced to the left by the Compression Spring and second gear is engaged. The second Screwed Rod now catches against the Collar 17, but as the Screwed Rod turns it is slowly withdrawn from the Collar, until the Compression Spring can force the Rod 15 to the extreme left to engage top gear.

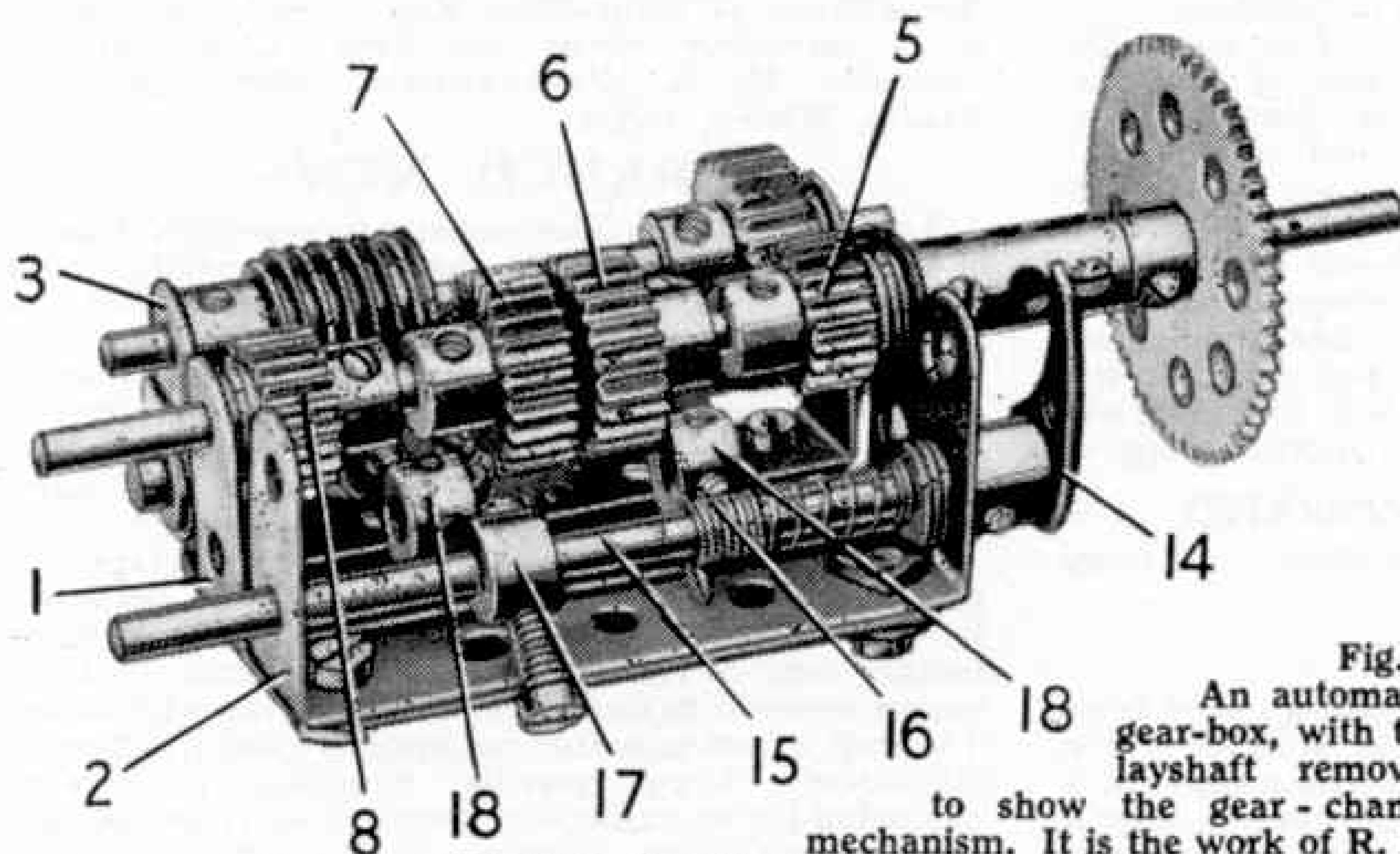


Fig. 1
An automatic gear-box, with the layshaft removed to show the gear-change mechanism. It is the work of R. M. Minshull, Macclesfield, and is shown complete in Fig. 2.

are used to fix also two $1'' \times 1''$ Angle Brackets 1. Two $2\frac{1}{2}'' \times 1''$ Double Angle Strips 2 and 3 are then attached to the slotted holes of the Flat Girders. The slotted holes enable the Double Angle Strips to be positioned so that a $\frac{3}{4}$ " Pinion on a Rod mounted in either of them meshes accurately with a $\frac{1}{2}$ " Pinion on a Rod supported in the Angle Brackets 1.

The input shaft is a Rod 4 passed through one of the Angle Brackets 1. The Rod carries four Washers, a $\frac{1}{2}$ " Pinion 5 and a $\frac{3}{4}$ " Pinion 6. The Rod 4 projects about $\frac{1}{4}$ " beyond the Pinion 6, into a $\frac{3}{4}$ " Pinion 7 on the output shaft. This shaft carries also a $\frac{1}{2}$ " Pinion 8, which is spaced from the Angle Bracket 1 by three Washers.

The layshaft is a $3\frac{1}{2}$ " Rod 9, fitted with a $\frac{3}{4}$ " Pinion 10, two $\frac{1}{2}$ " Pinions 11 and 12 and a $\frac{1}{4}$ " Pinion 13. The layshaft carries two Collars, with the end of a Pawl 14 located between them. The Pawl is fixed on a $3\frac{1}{2}$ " Rod 15, which is fitted with three Washers, a Compression Spring, a Cord Anchoring Spring 16 and a Collar 17. A $\frac{3}{4}$ " Bolt in the Collar bears against the housing and serves to keep the Pawl 14 between the Collars on the layshaft.

Two "spiders" 18, taken from Swivel Bearings, are screwed on to bolts passed through the housing, but are spaced from it by two Washers on each bolt. A $1''$ Screwed Rod is threaded through each spider, and is fitted with a $\frac{1}{2}$ " Pinion 19. A $\frac{1}{2}$ " Pinion 20 is free to turn on a $\frac{3}{4}$ " Bolt,

drum is controlled by a single lever, and as soon as the drive to the drum is disengaged a friction brake comes into action to prevent the drum from unwinding. The brake is released automatically when the drive is engaged. The mechanism is shown in Figs. 3 and 4.

The housing for the two drums is made from two $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flat Plates attached to $2\frac{1}{2}''$ Angle Girders, which are bolted to two $5\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips 1. The Flat Plates are connected by a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip 2. This arrangement provides a compact housing particularly suitable for models where space is rather limited, but of course the details can be varied in many ways.

The driving shaft is a Rod 3 supported in two Trunnions bolted to the Double Angle Strips 1.

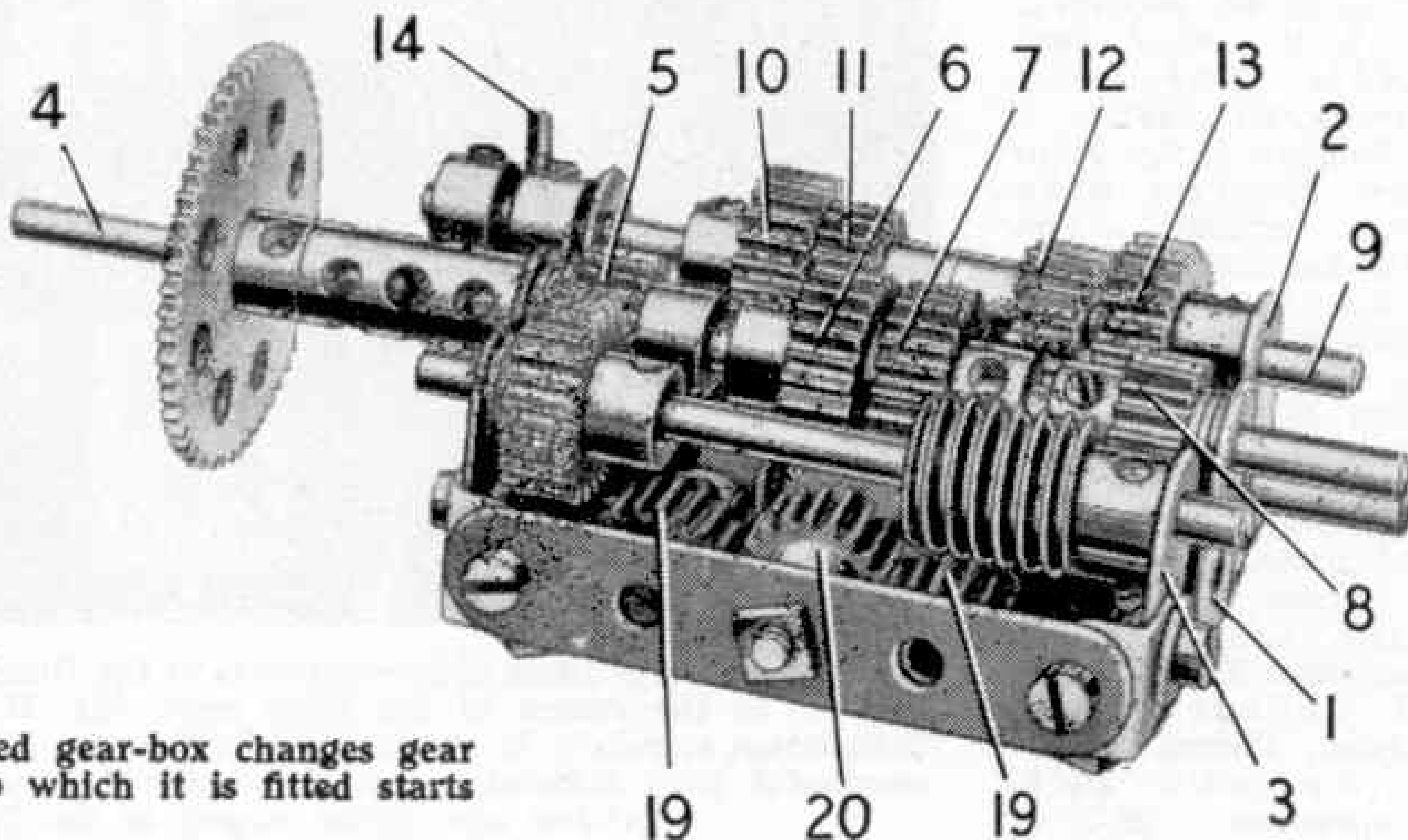


Fig. 2. This automatic three-speed gear-box changes gear automatically when the model to which it is fitted starts to run.

COMBINED BRAKE AND GEAR SELECTOR FOR CRANES

Mr. A. R. Seymour Dale, Eastbourne, recently built a model of a Jones K.L.66 Mobile Crane, and for use in it he designed a neat mechanism for operating and controlling the two winding drums. Each



M. J. Hibell, Brixham, who won a prize of £5 in the Meccano International Model-Building Competition.

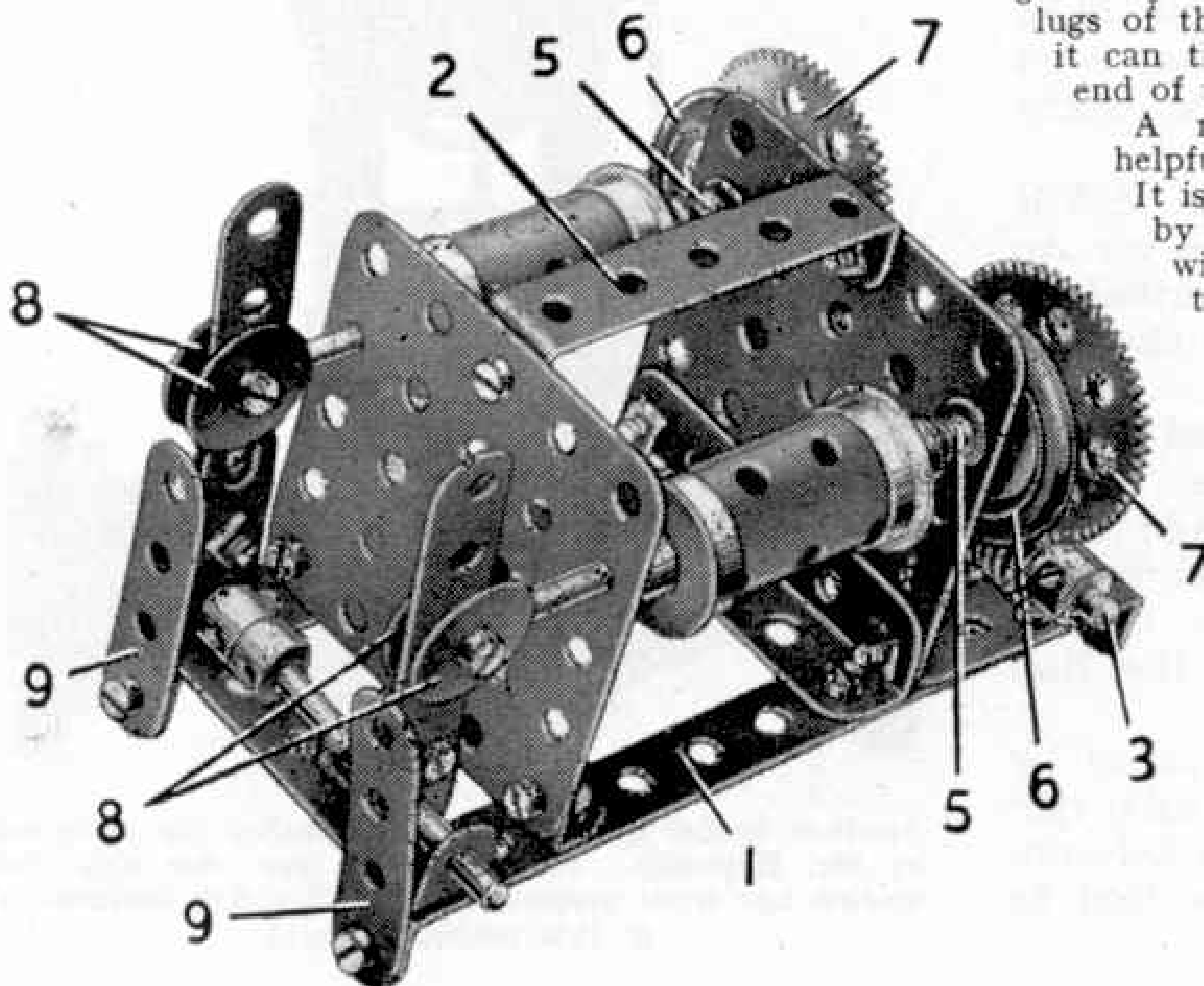
The Rod is fitted with two Worms 4, and the drive to it is transmitted through a $\frac{1}{2}$ " Bevel Gear mounted between the Trunnions.

The two winding shafts are identical in arrangement. The winding drum in each case is a Sleeve Piece fitted with two $\frac{1}{2}$ " Flanged Wheels, and it is fixed on a Rod supported in the Flat Plates. A Compression Spring 5 is placed between the drum and one of the Flat Plates and the Rod carries a 1" Pulley with Rubber Ring 6 and a 57-tooth Gear 7.

Each of the levers operating the winding shaft is a 3" Strip bolted to

a Crank. The Cranks are held in place by Collars on a 3" Rod mounted in a $2\frac{1}{2}$ " x $\frac{1}{2}$ " Double Angle Strip bolted across the Double Angle Strips 1. Two $\frac{1}{2}$ " Washers 8 spaced apart by four Washers are attached by a $\frac{1}{2}$ " Bolt to each lever, and the $\frac{1}{2}$ " Washers fit on either side of the winding drum shaft. The levers are held against the shafts by 2" Strips 9, bolted to the ends of the Double Angle Strips 1.

The operation of the mechanism is as follows. The Gear 7 is arranged so that when the 1" Pulley with Rubber Ring 6 is pressed against the Flat Plate the Gear is just clear of the Worm 4. The drive is then disengaged and the drum is prevented from turning by the friction between the Rubber Ring and the Flat Plate. When the operating lever is moved the Rubber Ring is forced away from the Flat Plate, thus releasing the brake, and at the same time the Gear 7 is moved into mesh with the Worm to engage the drive.



USEFUL MODEL-BUILDING HINTS

It sometimes happens in building certain kinds of models that a completely boxed-in structure is required. At first glance this may appear very difficult to construct, but actually it is quite simple if a supply of Screwed Rods of suitable sizes is available.

Three sides of the structure should be built up in the usual manner using ordinary nuts and bolts. The

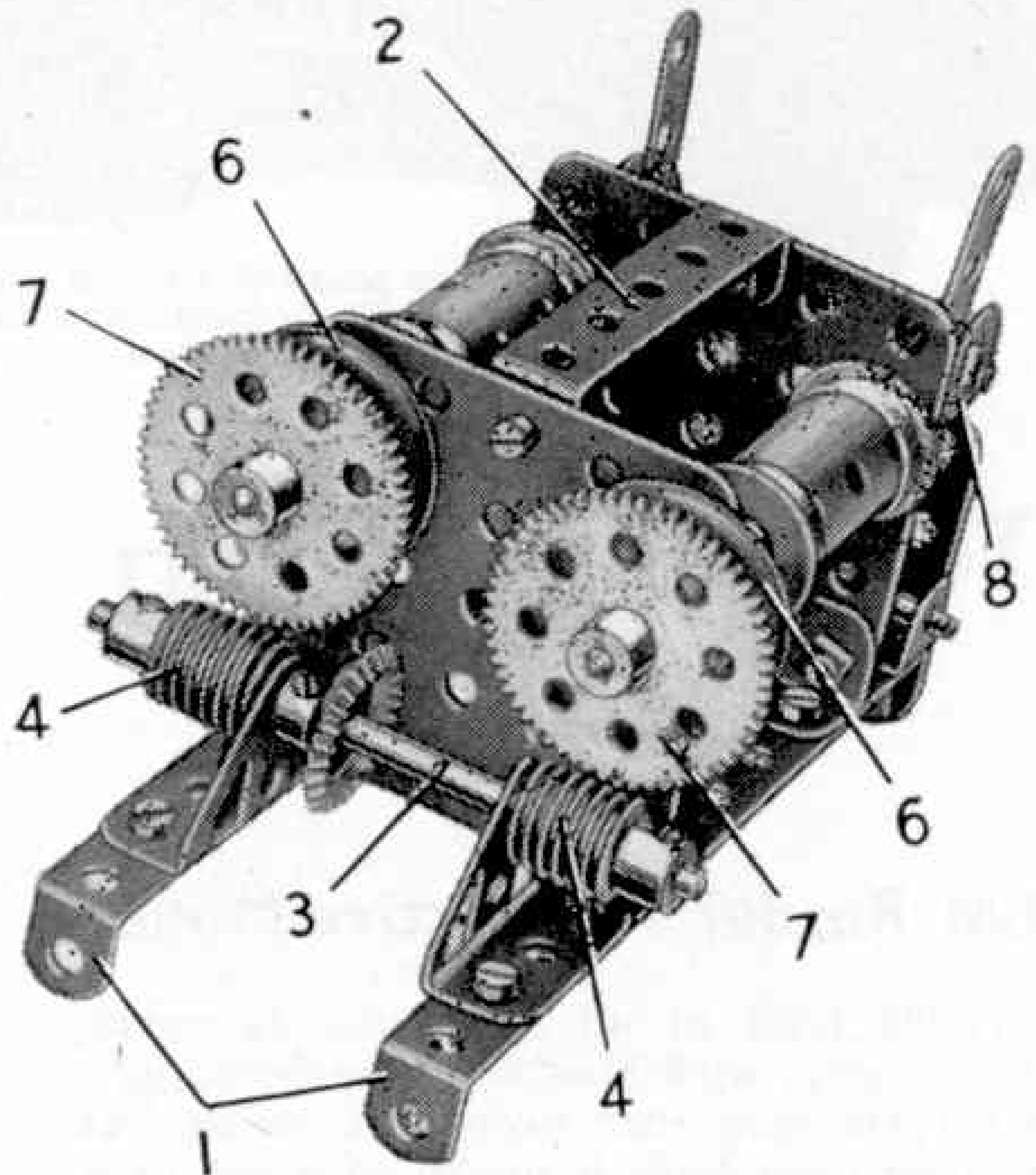


Fig. 3. A combined brake and gear selector for operating and controlling twin winding drums in cranes. It was designed by A. R. Seymour Dale, Eastbourne.

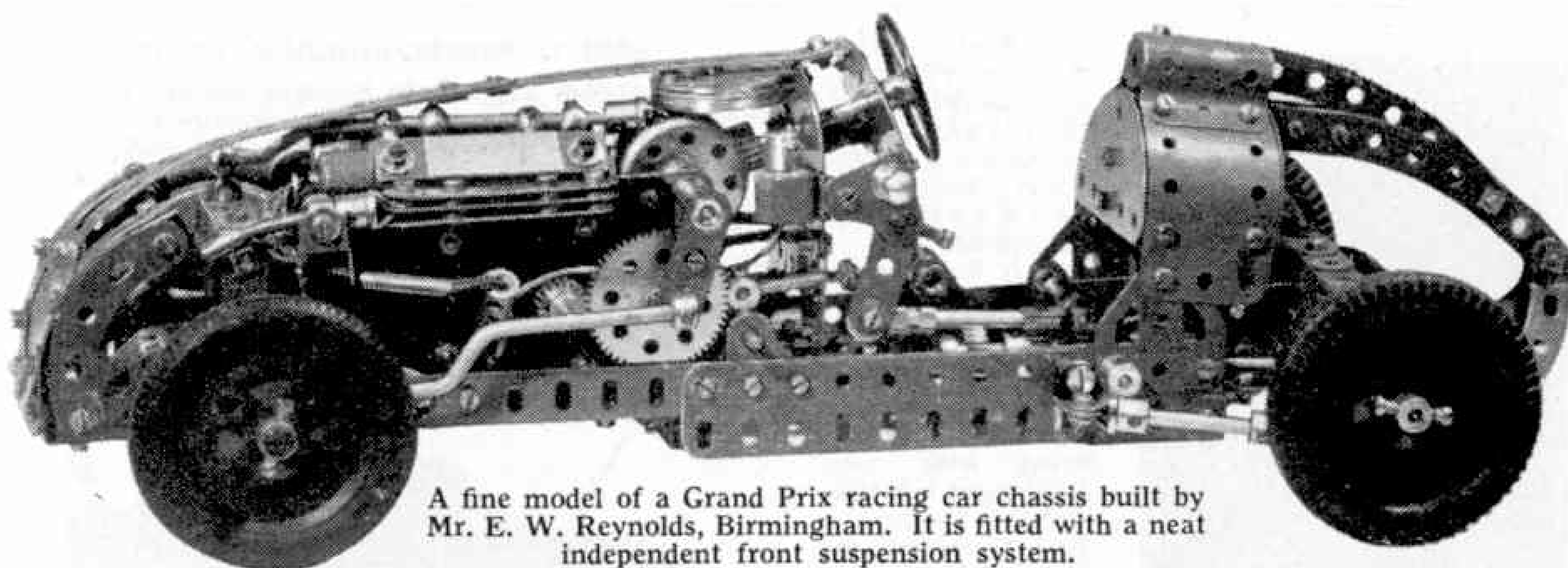
remaining side can then be fixed in position by passing Screwed Rods through the opposite faces and fitting nuts at each end.

When building certain complicated models or compact and intricate mechanisms it is sometimes necessary to fit a nut in a position not readily accessible by normal methods. The Meccano Box Spanner has been designed specially for use in such cases and generally will be found quite satisfactory. The lugs of the Spanner hold a nut securely, so that it can then be positioned quite easily over the end of the bolt.

A magnetised Screwdriver will be found helpful in placing bolts in difficult positions. It is quite easy to magnetise the Screwdriver by winding 20 or 30 turns of insulated wire around the shaft and then connecting the free ends of the wire to an accumulator for a few seconds. The Screwdriver will then be magnetised sufficiently to hold a bolt while it is inserted in the appropriate hole. An alternative method to magnetising the Screwdriver is to place a small piece of Plasticine or gum on the head of the bolt.

Here is another tip that may come in useful in simple models such as cranes, when a Cord Anchoring Spring is not available. A Cord can be secured firmly to a Rod by tying it round the lugs of a Spring Clip placed on the Rod.

Fig. 4. Another view of the combined brake and gear selector.



A fine model of a Grand Prix racing car chassis built by Mr. E. W. Reynolds, Birmingham. It is fitted with a neat independent front suspension system.

Two Fine Racing Cars

By "Spanner"

M.M. Reader's Attractive Models

VEHICLES of all kinds are favourite subjects with Meccano model-builders, and I am sure that every enthusiast has at some time built a model of a car or a lorry. Racing cars, however, which have a mass of intricate detail crowded into a narrow streamlined shape, are not the easiest models to construct, and I think that everyone who has made a model of this kind will join me in congratulating Mr. E. W. Reynolds, Birmingham 15, on the excellent work he has done in designing and building the two racing car chassis shown in the pictures on this page. The upper illustration shows a model of a typical Grand Prix type chassis that is an outstanding example of compact workmanship.

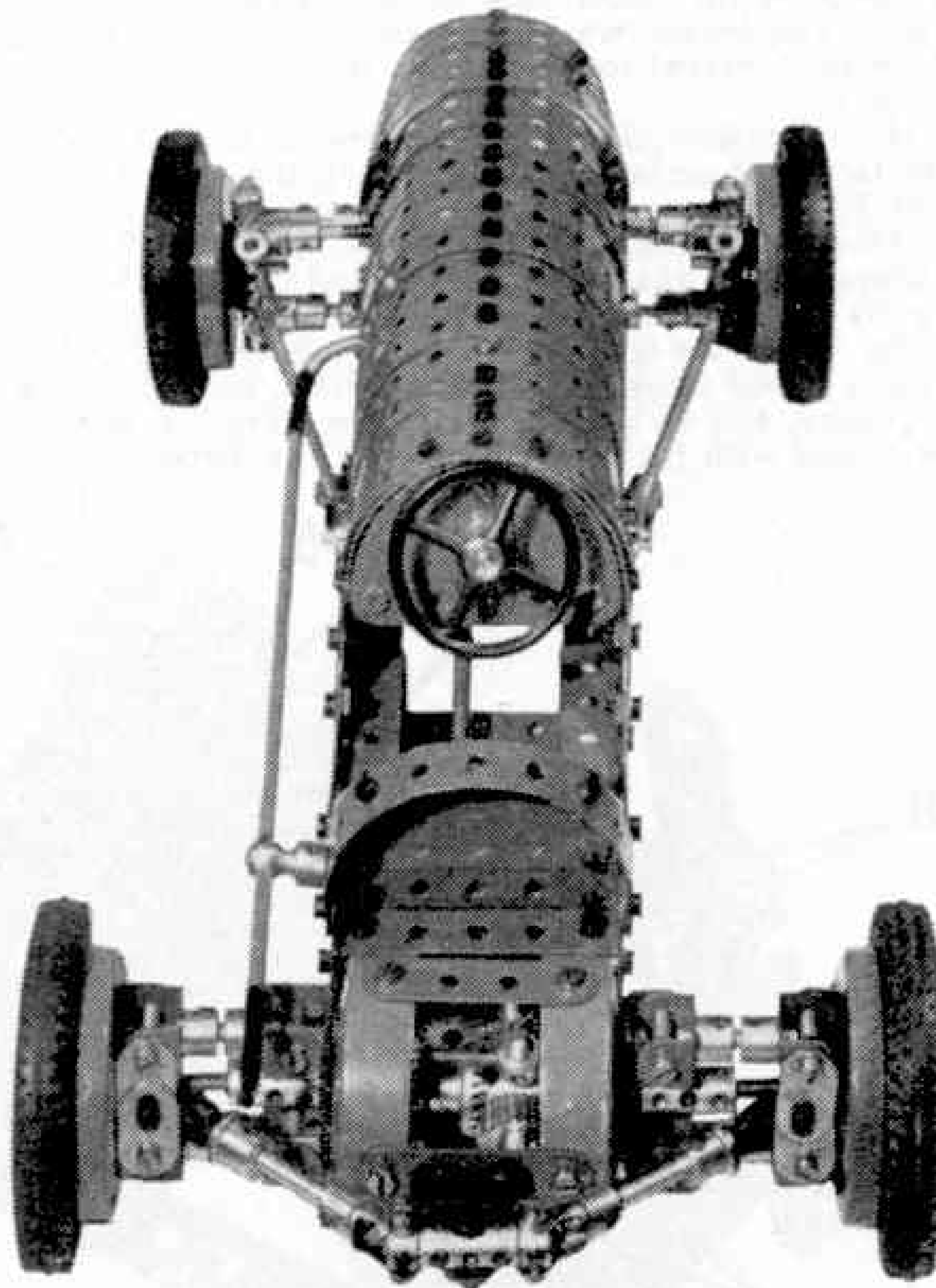
The model is powered by an E20R Electric Motor, which is built-up to represent in outline the engine fitted to the actual car. The Motor drives the rear axle through a working gear-box.

The front suspension is based on a system of trailing parallel links. There are two links on each side, made from Cranks pivoted on Rods mounted in the chassis. The rear ends of the Cranks support Collars, in which is held the Rod carrying the stub axle.

The steering mechanism is actuated by two $1\frac{1}{2}$ " Contrates, placed one on each side of a $\frac{1}{2}$ " Pinion on a short steering column. Each Contrate is connected by a Rod to the front wheel steering arm.

The lower picture shows another detailed racing car built by Mr. Reynolds. In this the rear suspension is especially noteworthy, as it follows closely the De Dion system used in many actual racing cars. The differential casing is attached to the chassis, and the rear wheels are carried on stub axles driven through Flexible Coupling Units. The rear suspension links are large Fork Pieces connected in pairs by 1" Rods, and the inner end of each link pivots on a $\frac{3}{4}$ " Bolt passed through a Double Bracket.

The front suspension uses torsion bars formed by Screwed Rods.



Another model of a Grand Prix racing car designed by Mr. Reynolds. The De Dion type rear axle and torsion bar front suspension are attractive features of this realistic model.

New Meccano Model

Motor Scooter

ONE of the many smaller types of vehicles seen on the roads to-day is the compact motor scooter, and it is one of these that is represented by this month's new model, seen in Fig. 1. It is quite simple in construction and building is begun by bolting 5½" Strips 1 to the lugs on each side of a *Magic Clockwork Motor*. A 4½" Strip 2 is attached to the Strip 1 on each side by a Fishplate, and a 2½" × 1½" Flexible Plate, curved at its upper end as shown, is fixed to each of the Strips 2. The 2½" × 1½" Flexible Plates are connected by Obtuse Angle Brackets to a 2½" × 1½" Flanged Plate, which is placed with its flanges upward. A further 2½" × 1½" Flanged Plate, edged by 2½" × ½" Double Angle Strips, is connected to the first Flanged Plate by two 3" Screwed Rods 3. The seat is a Flat Trunnion supported by three ½" Bolts, and it is spaced from the Flanged Plate by Compression Springs on the Bolts.

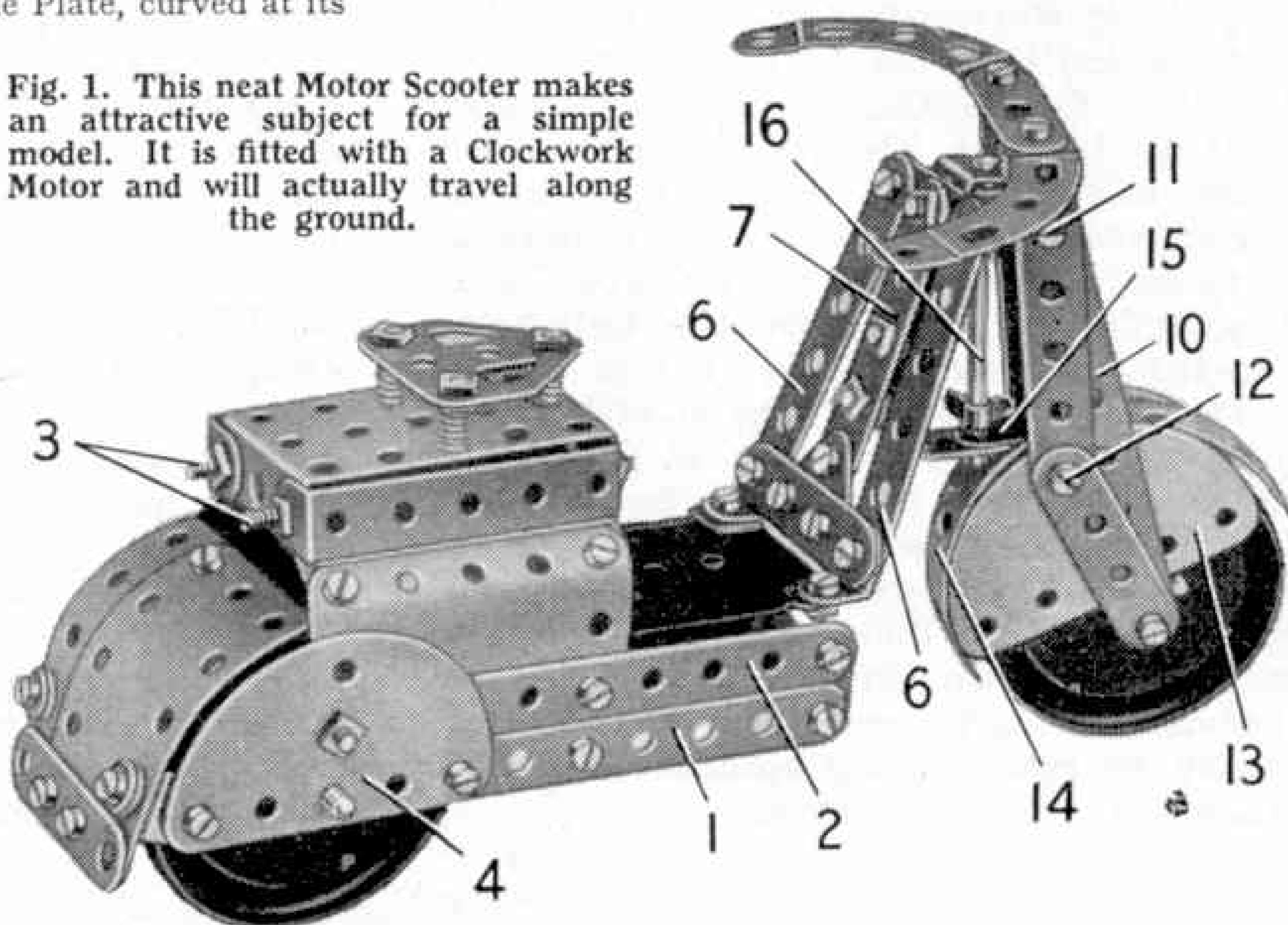
The cover over the rear wheel is made by bolting a Semi-Circular Plate 4 to the Strips 1 and 2 on each side. It is completed by two 2½" × 1½" Flexible Plates, curved as shown and overlapped two holes. The Flexible Plates are connected to the Semi-Circular Plates by Angle Brackets, and they are strengthened along their lower edges by a 2" Strip.

The rear wheels are fixed on a 2½" Rod and a 1" Pulley 5 is placed between them. The Pulley is connected by a Driving Band to the pulley on the driving shaft of the *Magic Clockwork Motor*.

Two 3" Strips 6 are fixed to Angle Brackets bolted to the front of the Motor. Their top ends are connected by a 1½" Strip, and a 2½" Strip 7 is fixed between this and a 1" Triangular Plate that is attached to a 2" Strip bolted to the lower ends of the Strips 6. An Angle Bracket 8 is fixed to the centre of the 1½" Strip, and a 1" × 1" Angle Bracket 9 is held on ½" Bolts fixed in the Strip 7. This Angle Bracket is spaced from the Strip by ten Washers on each Bolt.

The front fork consists of a 4½" Strip 10, a 2" Strip and a 2½" Strip on each side. These parts are joined at the top by a Double Bracket held by a Bolt 11. A second Double Bracket is fixed by a Bolt 12 on each side, and these Bolts secure also Semi-Circular Plates 13. Two Formed Slotted Strips 14 are also attached

Fig. 1. This neat Motor Scooter makes an attractive subject for a simple model. It is fitted with a Clockwork Motor and will actually travel along the ground.



to the Double Bracket, and a Fishplate 15 is held by the same bolt. The front wheel turns freely on a 1½" Bolt attached to the fork by nuts.

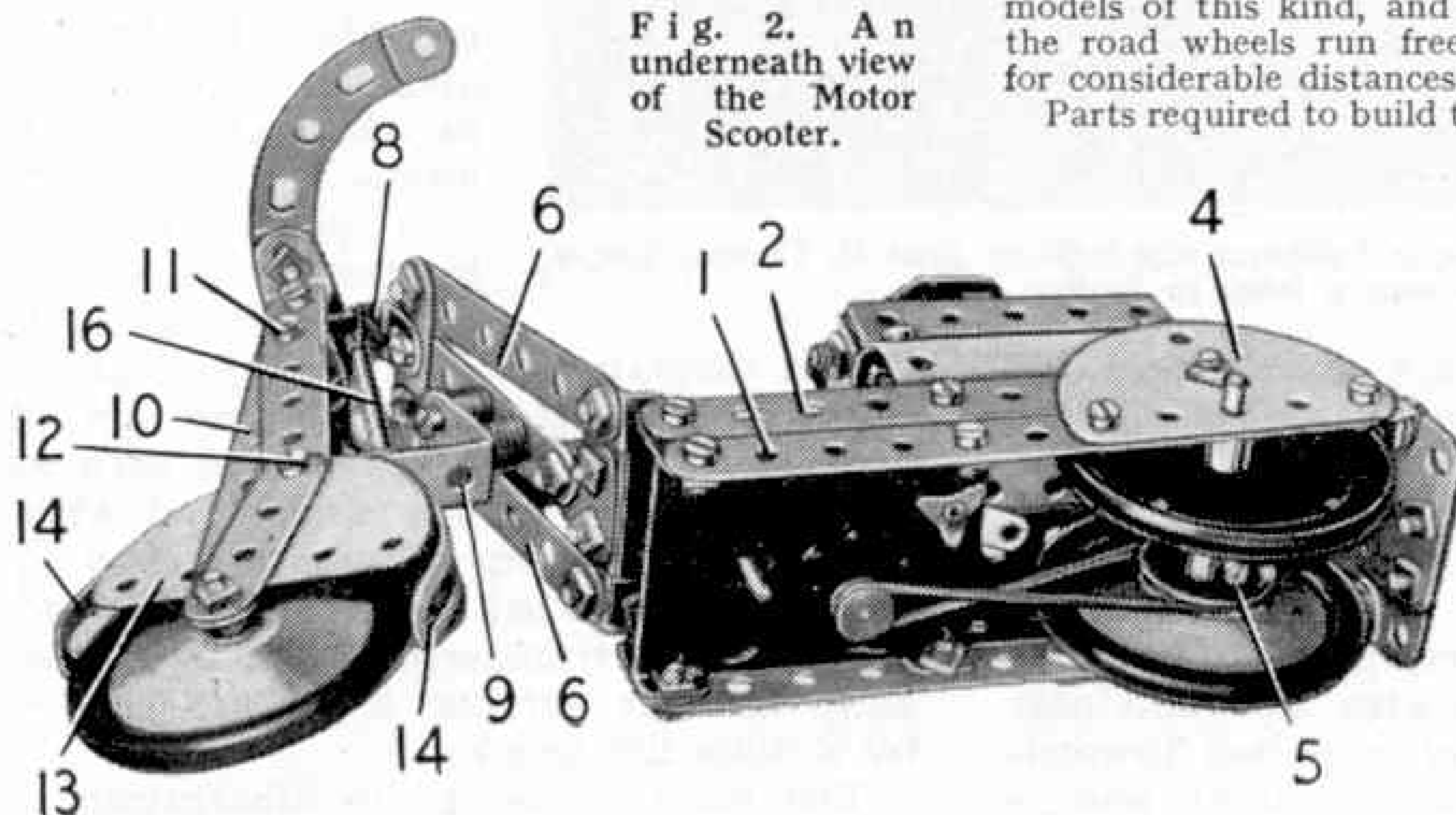
The fork is pivoted on a 2½" Rod 16 passed through the Angle Brackets 8 and 9, the Fishplate 15 and a second Fishplate fixed to the Double Bracket held by the Bolts 11. The Rod is kept in position by Spring Clips. The handlebars are two 2½" Stepped Curved Strips bolted to a 1½" Strip that is attached to the top of the fork by two Angle Brackets.

There are several other types of motor scooters to be seen on the roads to-day and readers will find it very pleasant to try modelling some of these for themselves. They are easy to build and are just the thing to occupy an odd half hour or so. The *Magic Motor* lends itself particularly well for use in models of this kind, and if care is taken to see that the road wheels run freely it will drive the models for considerable distances.

Parts required to build the Motor Scooter: 2 of No. 2;

4 of No. 2a; 2 of No. 4; 3 of No. 5; 4 of No. 6; 2 of No. 6a; 4 of No. 10; 2 of No. 11; 7 of No. 12; 1 of No. 12a; 4 of No. 12c; 2 of No. 16a; 1 of No. 22; 2 of No. 35; 47 of No. 37; 14 of No. 37a; 26 of No. 38; 2 of No. 48a; 2 of No. 51; 1 of No. 77; 2 of No. 80c; 2 of No. 90a; 5 of No. 111a; 1 of No. 111d; 3 of No. 120b; 1 of No. 126a; 1 of No. 186a; 3 of No. 187; 4 of No. 188; 4 of No. 214; 2 of No. 215; 1 *Magic Clockwork Motor*.

Fig. 2. An underneath view of the Motor Scooter.



More Prize-winning Models

A Further Selection from the International Contest

ONE of the neatest models entered in Section C of the International Model-Building Competition, was a bulldozer built by John H. Thorpe, Sidcup. This is shown in Fig. 1 and I am sure that readers will appreciate its many good constructional features. It is based on a Type "D.8" Tractor manufactured by the Caterpillar Tractor Company, Peoria, U.S.A.

The main details of the model are as follows. It is just over 2 ft. in length and 13½ in. wide, and it is driven by a 20-volt Electric Motor concealed within a dummy engine. Transmission is through a single-plate clutch to a four-speed gear-box (two forward and two reverse), bevel gears to individual track steering clutches and finally to rear driving sprockets on each track via steering brakes.

lowered by pushing it outwards. Another feature of the full-size tractor that is reproduced in the model is that the complete tracks can oscillate vertically within certain limits, thus maintaining ground contact even when travelling over uneven surfaces.

Dummy equipment on the "engine" of the model includes an air intake, filter and starting engine on the right-hand side, and engine oil and fuel filter, and fuel pump on the opposite side.

P. Kempers, Rotterdam, was awarded a prize of £5 in Section B for the fine model of a dockside crane shown in Fig. 2. The model is based on an actual crane used for unloading ships in the Port of Rotterdam, and it carries out all the essential movements of the real crane, including hoisting, luffing, travelling and slewing. These movements are operated by two E20R Electric Motors, one mounted in the cab and the other housed in the tower of the model.

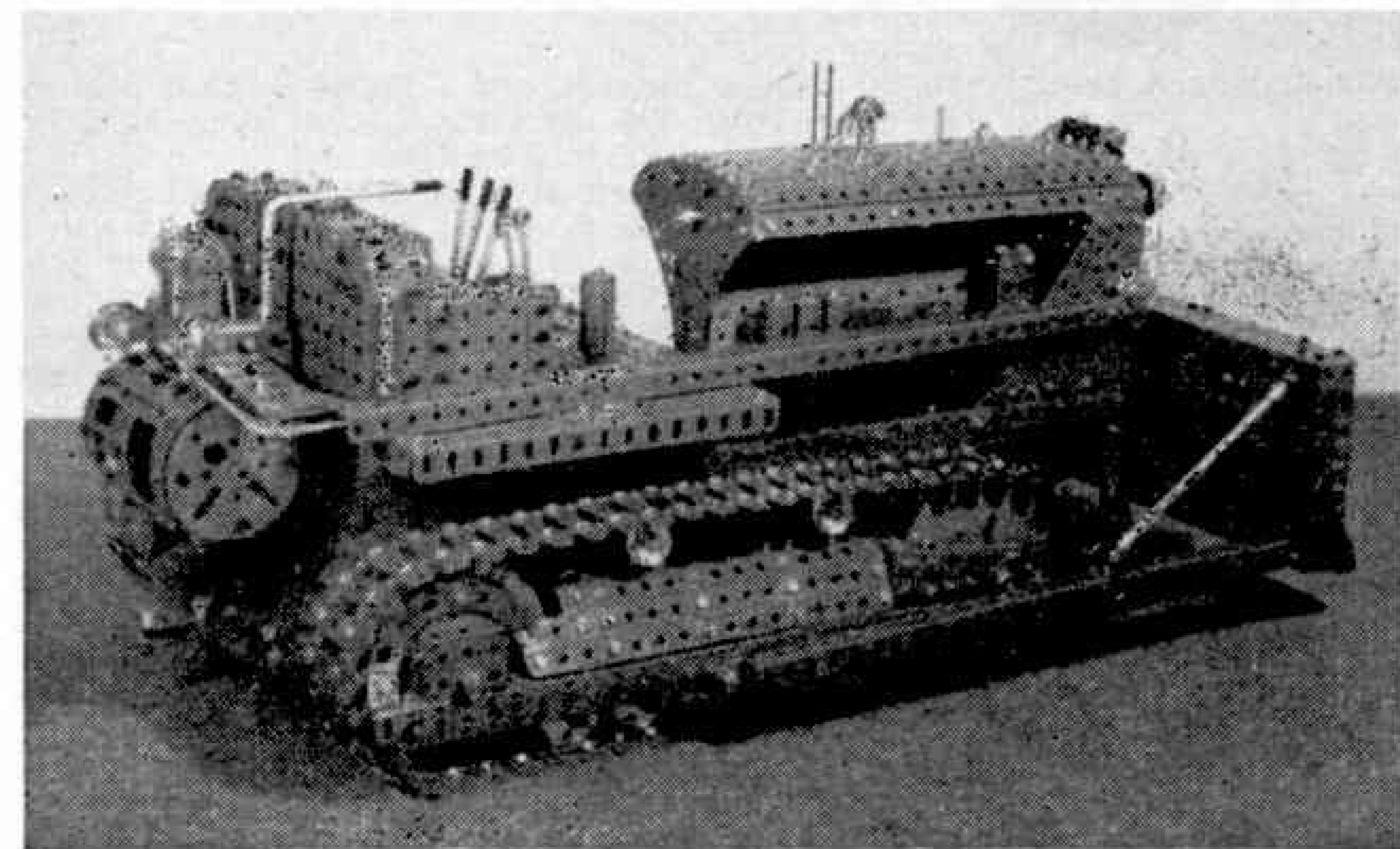
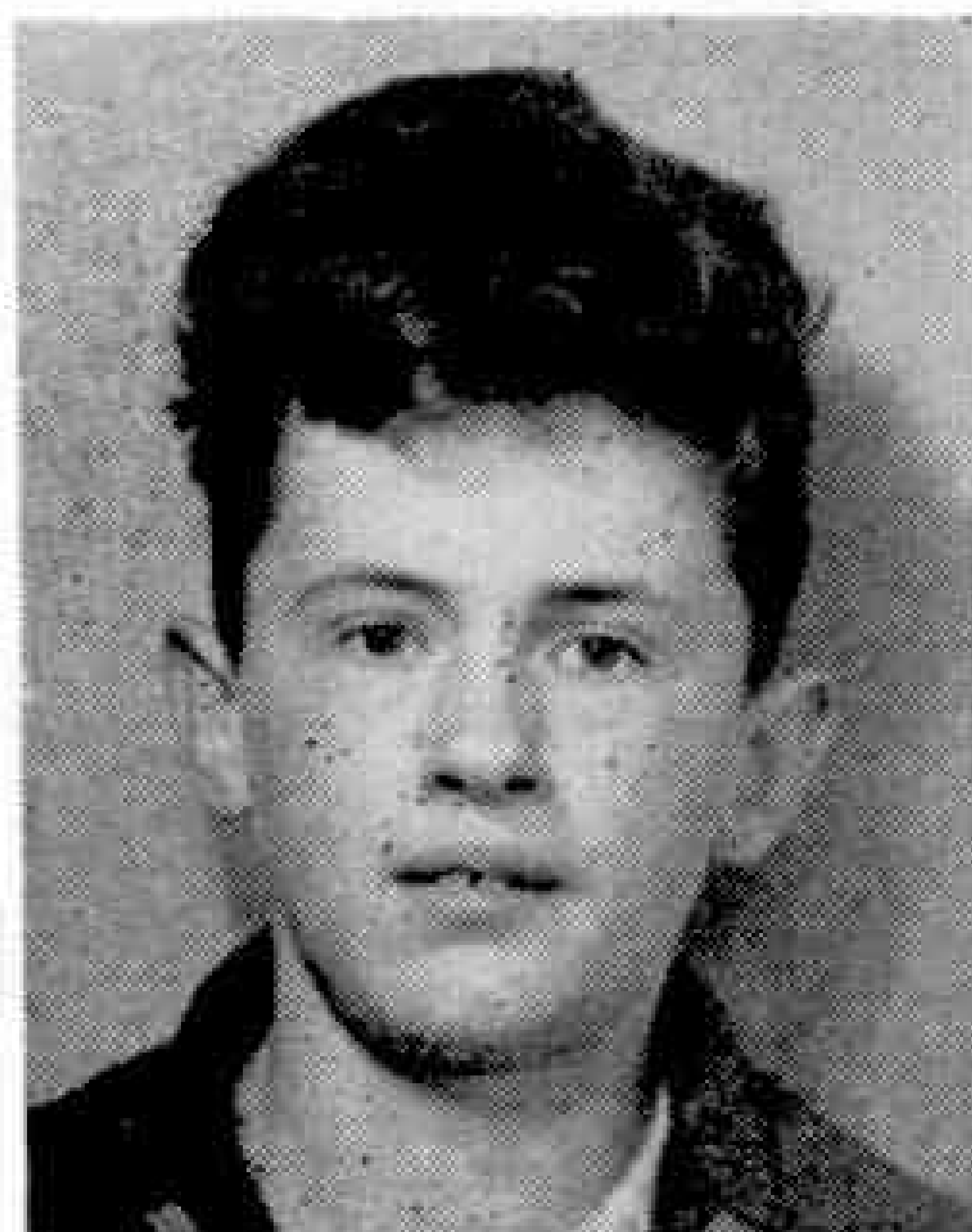


Fig. 1. This neat crawler tractor bulldozer was built by John H. Thorpe, Sidcup, who won a Prize in Section C.

Operating controls are placed similarly to those in the actual machine, and comprise a main flywheel clutch lever, separate steering clutch levers, forward and reverse gear lever, speed selector gear lever, and left and right track brake pedals. A further lever, projecting above the driver's seat, operates the bulldozer blade. When this lever is pulled towards the operator the blade is raised and is



Noel Burrows, Leiston, Suffolk, who built the fine lorry shown on the opposite page.

it was displayed at the Utrecht Fair last year, on the stand of a manufacturer who produces wooden pallets for use with fork lift trucks. The crane was fitted with a small pallet to demonstrate the ease with which goods loaded on a pallet on board a ship can be transferred to the quayside and, without further handling, removed by a fork lift truck.

The third model I am illustrating this

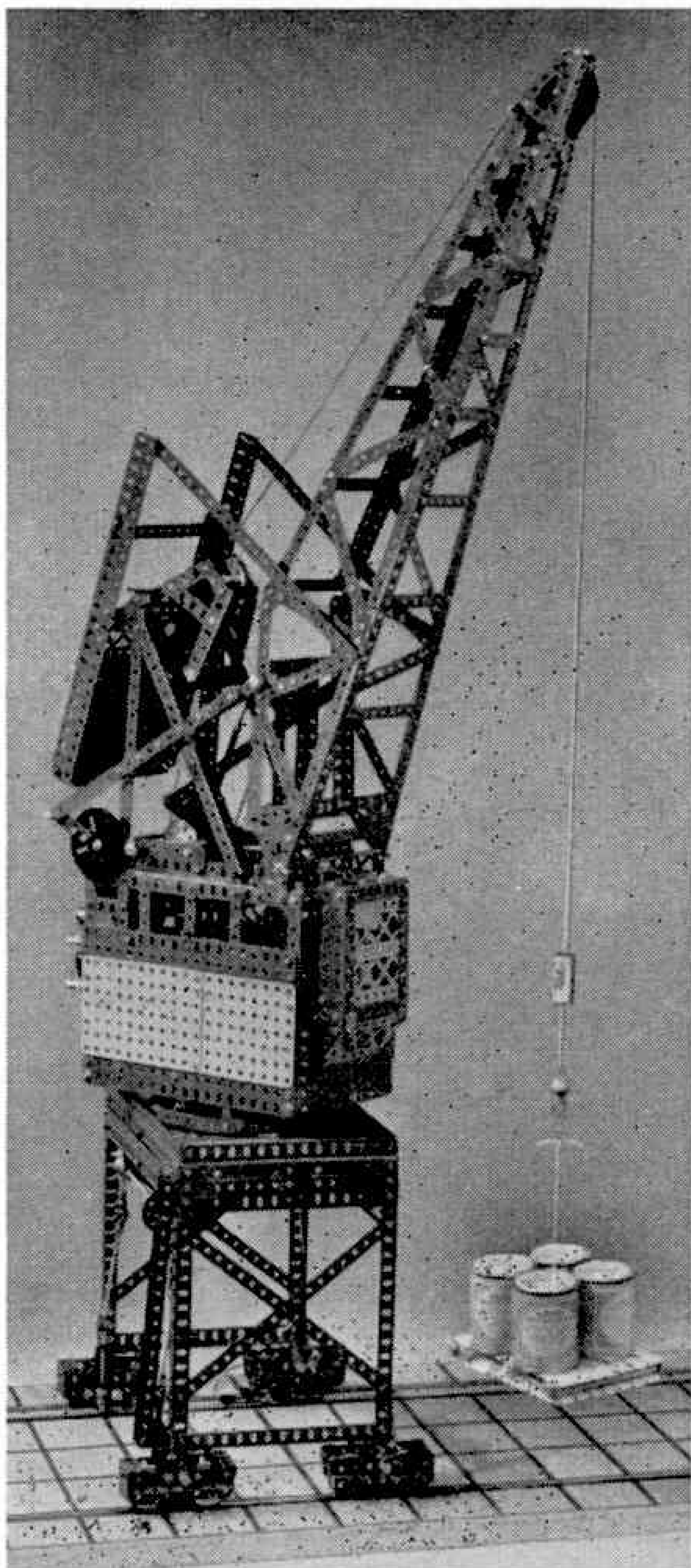


Fig. 2. Visitors to the Utrecht Fair last year, would see among the exhibits this fine model dockside crane. It was built by P. Kempers, Rotterdam, and was successful in winning a Prize in the Meccano International Model-Building Competition.

example, numerous fittings including wind-screen wiper, mirrors, front, rear and side lights and signals. All the windows are filled in with mica, which gives the model a most realistic appearance. The mudguards are sunk into the outline of the body and the cab doors, tail-board and front windows are all hinged.

The chassis mechanism includes a three-speed and reverse gear-box, differential, four-wheel steering and an engine unit represented by an E20R Electric Motor. The model is 3 ft. 3 in. long and 9½ in. wide and it has a particularly sturdy and businesslike appearance.

A COMPETITION REMINDER

There is still time to send in entries for the October General Model - Building Competition, but intending competitors must hurry now as the Contest closes at the end of this month. In this Competition Cash Prizes are offered for Meccano models of any kind built from any number of parts. The Contest is open to readers of all ages living in any part of the world, and the closing date is 30th January.

The Competition is divided into two Sections: A, for competitors under 14 years of age on the 30th January, and B, for competitors over 14 years of age on that date.

The following prizes will be awarded in each Section. First, Cheque for £5. Second, Cheque for £3. Third, Cheque for £2. Ten Prizes, each of £1 and ten Consolation awards, each of 5/-. A number of Certificates of Merit also will be awarded. Entries, in the form of photographs or drawings only, must be addressed "*October Meccano Model - Building Competition, Meccano Ltd., Binns Road, Liverpool 13.*"

month is an attractive eight-wheeled lorry. This is shown in Fig. 3 and it won a Prize in Section B for Noel Burrows, Leiston, Suffolk. Its success was due very largely to the neat and detailed work in its construction. There are for

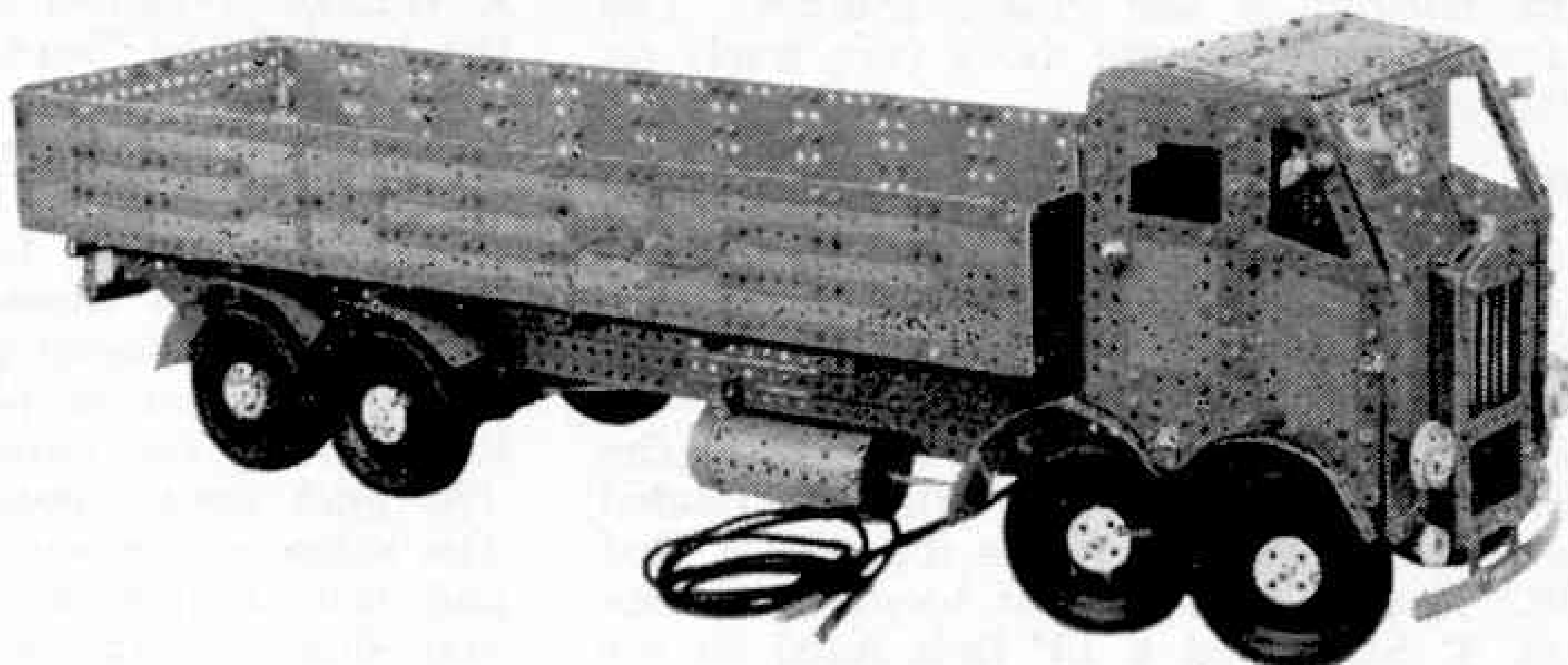


Fig. 3. An attractive eight-wheeled lorry built by N. Burrows, Leiston, Suffolk, a prize-winner in Section B.

A New Meccano Loom

The Beaming Frame and Other Details

By 'Spanner'

ASSUMING that the Loom has been built up to the stage described in last month's *M.M.*, the next operation is the construction of the Heald Frames. These are the frames that hold the Healds through which the warp threads are passed from the beam. They are actuated by the cams 56 and rise and fall to provide the "shed" through which the shuttle carrying the weft thread passes.

On a 4" Rod (bottom) and a 4½" Rod (top) 30 Healds should be placed, with a Coupling on each end of each Rod. The Couplings are joined together lengthwise by 5" Rods, and these must be passed through the top 3½" Angle Girders 6 before the Rods are fixed in the Couplings. The lower Couplings carry 3½" Rods to extend the 5" Rods lengthwise, and an End Bearing 52 (Fig. 3, December *M.M.*) is secured to the bottom of one of the Rods. A 7½" Strip 53 is pivoted between the lugs of the End Bearing, and this Strip is *lock-nutted* to a Fishplate 54 pivoted on Rod 55. The Fishplate is *lock-nutted* in the 10th hole of Strip 53, counting from the End Bearing. Spring Clips are used to space the Fishplates and hold the Strips 53 in line with cams 56.

After being raised by the action of the cams, the Heald Frames are returned to their lowest positions by the tension of 2½" and 6" Driving Bands looped together and anchored on a Rod 57 (Fig. 3), and the bottom of the Heald Frames. The Heald Frames should move very freely on depressing Strips 53.

The Warp Tension Mechanism

A simple mechanism is provided to keep the warp threads at a suitable tension. This is shown clearly in Figs. 3 and 4. Two Bush Wheels are fixed to Rod 58, with a 3" Rod 59 mounted in holes in the Bush Wheels. A Bush Wheel extended with a 3" Strip is fixed to the end of Rod 58. A 6" Driving Band looped between the 3" Strip, and a 1½" Bolt fixed to the

frame imparts the required tension to the warp threads while the Heald Frames are moving up and down. A Cord, slightly tensioned with a Spring and passed over a 1½" Pulley 61, maintains tension on the warp beam.

The Shuttle

Construction of the shuttle, which is shown in Fig. 2 on the opposite page, is quite simple. It consists of two 3½" Strips, two End Bearings and a 1½" Rod. The ends of the Strips are bent slightly to fit the lugs of the End Bearings. A ⅜" Bolt, which should for preference be

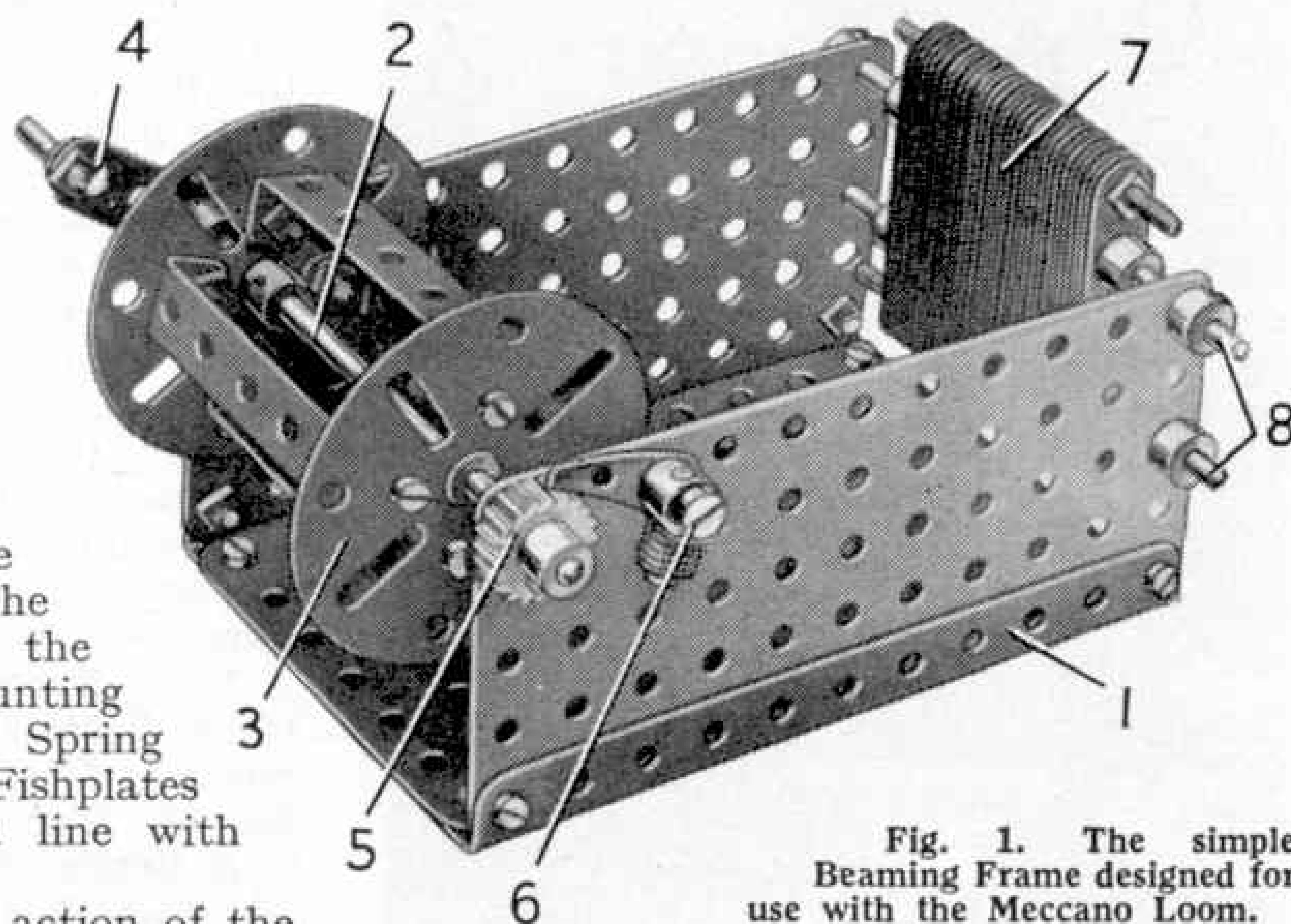


Fig. 1. The simple Beaming Frame designed for use with the Meccano Loom.

filed slightly shorter, is passed through the end hole of one of the Strips and then through the lugs of an End Bearing. A Washer is placed on the Bolt between the lugs of the Bearing, and the Bolt is then passed through the end hole of the other 3½" Strip. This process is repeated at the other ends of the Strips.

A 1½" Rod that forms the spindle on which the weft thread is wound, is held loosely in the bosses of the End Bearings, and is retained in place by stops made by screwing the grub screws right down. *The grub screws must not grip the Rod.* The sides of the shuttle must be parallel and the completed shuttle must be an easy sliding fit in the shuttle race. When

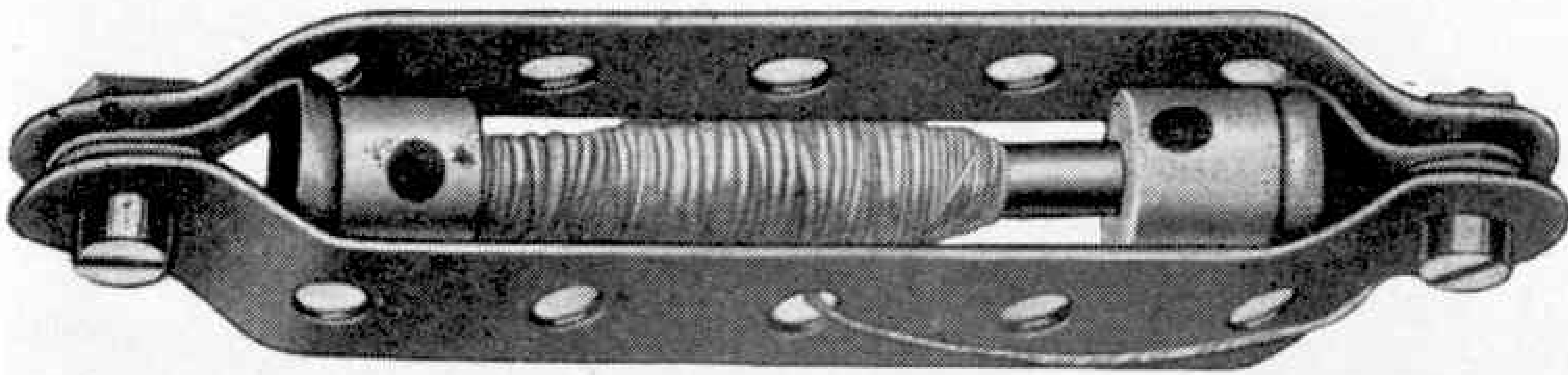


Fig. 2. The built-up Loom Shuttle.

Drawing the warp

Put the prepared beam in the

loom. Take the first thread, pull it through the *first* heald on the *front* frame, then the second thread and pull it through the *first* heald on the *back* frame. These two threads are drawn through the *first* division or dent in the reed. Continue in this way using each dent until all the threads are drawn through. Lightly brush and pass them around the upper roller and secure them to the take-up roller by means of the Rod placed in its groove.

it is in position in the race the picking sticks must strike the shuttle nose centrally.

Beaming Frame

Fig. 1 shows a simple Beaming Frame suitable for preparing the beam of warp threads ready for insertion in the Loom. The base of the frame is a $5\frac{1}{2}'' \times 3\frac{1}{2}''$ Flat Plate, fitted at each side with a $5\frac{1}{2}''$ Angle Girder 1 that supports a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flat Plate. A Rod 2 carries the beam 3 on which the threads are wound.

A handle 4 is fitted to one end of the Rod 2, and the other end carries a Ratchet Wheel 5. A Pawl 6 on a Pivot Bolt engages the teeth of the Ratchet Wheel. The Pawl is weighted by Washers on a $\frac{3}{8}''$ Bolt screwed into its boss.

The reed or frame 7 consists of 31 $2\frac{1}{2}''$ Strips spaced apart by Washers on two Screwed Rods, and is supported in the $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flat Plates by Collars on two Rods 8.

Now knock two nails into a wall, a few yards apart, and then wind around them 30 turns of thread. These are now taken off the nails carefully, and cut at one end. You will then have 60 separate lengths of thread. The threads are now drawn through the reed, two threads between each pair of Strips, and with one knot are secured to the centre of the beam axle. Holding the threads tightly in the left hand, wind them on to the beam; the reed will space the threads evenly between the Face Plates. A little practice will soon produce a neat beam.

loom. Take the first thread, pull it through the *first* heald on the *front* frame, then the second thread and pull it through the *first* heald on the *back* frame. These two threads are drawn through the *first* division or dent in the reed. Continue in this way using each dent until all the threads are drawn through. Lightly brush and pass them around the upper roller and secure them to the take-up roller by means of the Rod placed in its groove.

Timing the Loom

The mechanism must be set so that when the slay is at back centre, one heald frame is in its highest position and will stay up until the shuttle has passed through the warp threads. The picking stick motion should then come into action just before the slay reaches back-dead centre, and should shoot the shuttle across to reach the other end just as the slay leaves back dead-centre. A little time spent in careful adjustment will soon give the desired position for smooth running.

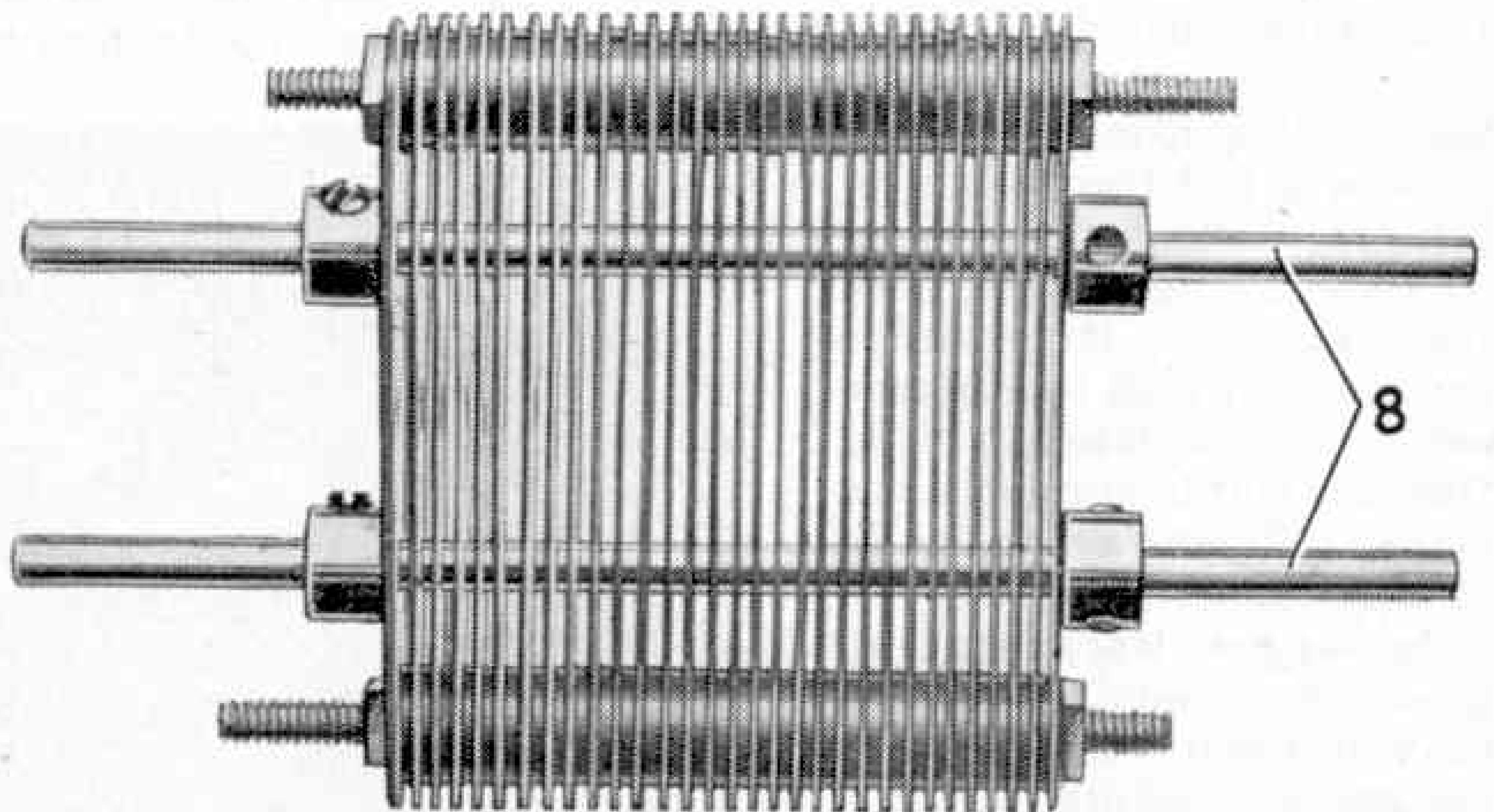
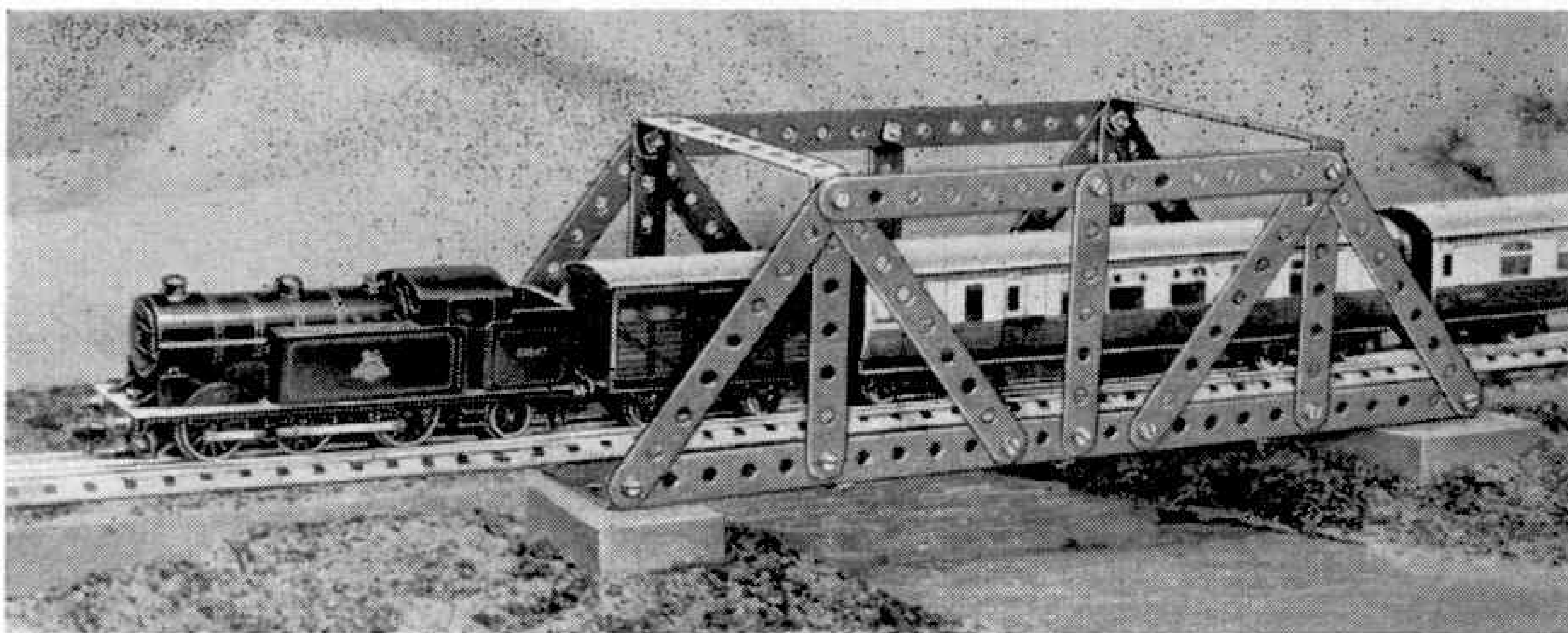


Fig. 3. The reed removed from the Beaming Frame to show its construction more clearly

Parts required to build the Meccano Loom: 6 of No. 1a; 5 of No. 1b; 14 of No. 2; 5 of No. 2a; 9 of No. 3; 3 of No. 4; 33 of No. 5; 1 of No. 6a; 4 of No. 8; 6 of No. 8a; 4 of No. 8b; 9 of No. 9; 2 of No. 9a; 6 of No. 9b; 2 of No. 9d; 10 of No. 10; 1 of No. 12; 3 of No. 12a; 1 of No. 12b; 1 of No. 13; 3 of No. 13a; 4 of No. 14; 6 of No. 15; 5 of No. 15a; 2 of No. 15b; 6 of No. 16;
(Continued on page 50)



A girder bridge of Meccano Parts carries this Hornby-Dublo line across a miniature river. A Hornby-Dublo Tank is crossing the bridge with a passenger train.

HORNBY RAILWAY COMPANY

By the Secretary

Engineering Features in Hornby-Dublo

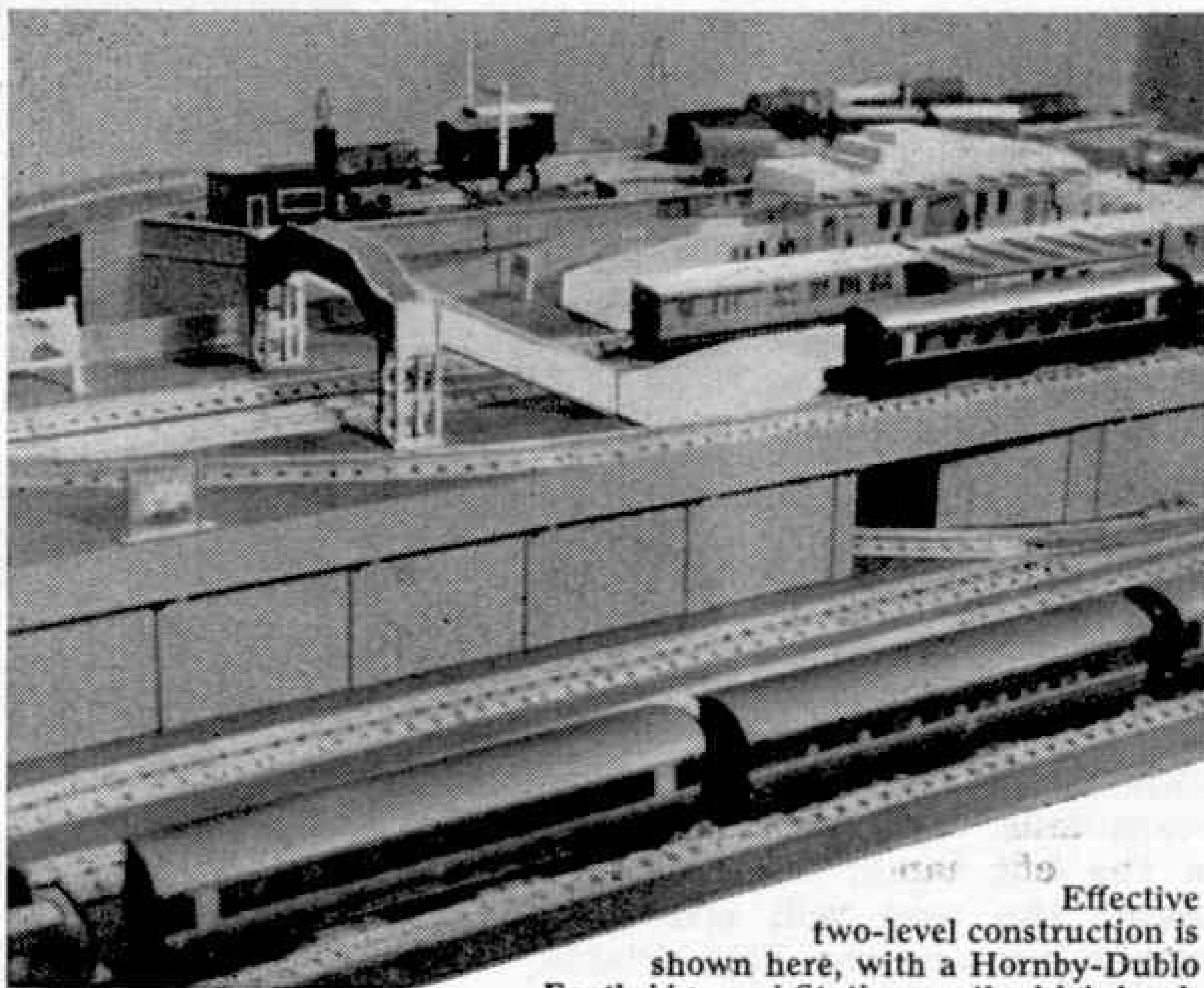
I suppose that apart from running our trains as nearly perfectly and realistically as possible, we all aim to see that our Hornby-Dublo layouts at least look like real railways, and indeed *are* as much like them as we can make them.

It has often been said that a plain track has little merit except that it provides the path for trains to run on. On real railways what are known as the way and works are the responsibility of the Civil Engineer, who thus has to look after not only the track, but the buildings, bridges, earthworks and so on that are associated with the railway. He cannot complain of lack of variety, and his counterpart in Hornby-Dublo similarly has many different interests to occupy his attention.

As our first tracks start to grow, we usually try to provide them with stations, bridges and similar lineside affairs. All these of course are represented in the Hornby-Dublo range and most layouts incorporate them very effectively. They have the special advantage that they are consistent in design. So the Island Platform and the Through

Station can be used together if necessary, as they are in the lower picture on this page, to produce a two- or three-road station. When two platforms are connected by means of the Footbridge, as they are in this instance, a very realistic effect is obtained.

Signals of course are necessary in any installation, and this means that we must also have Signal Cabins. The use of the signals themselves of course is an important



Effective two-level construction is shown here, with a Hornby-Dublo Footbridge and Station on the high level.

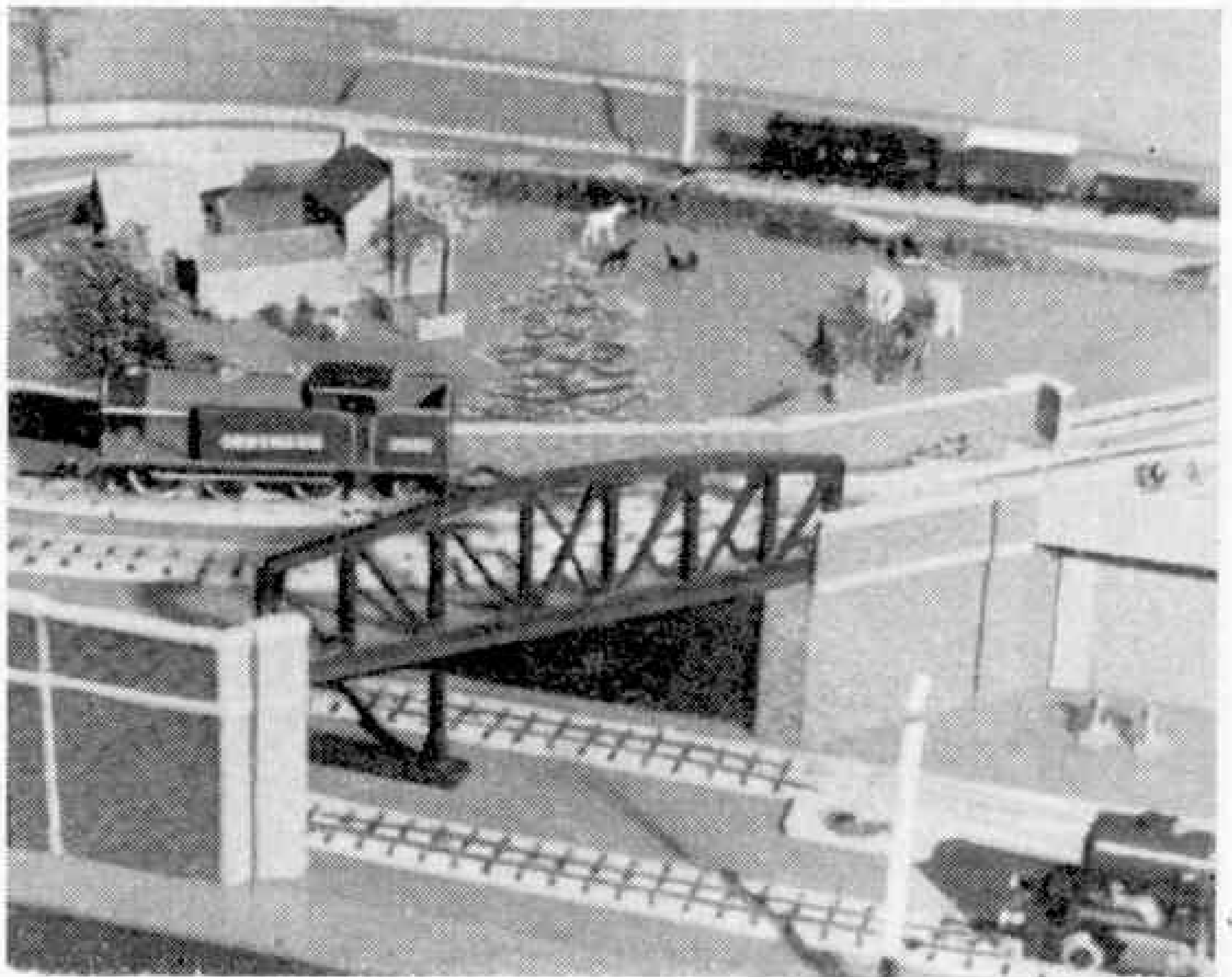
subject in itself, which we must leave for further articles.

Walls and fences are necessary lineside features and notes have appeared previously in these pages on their use in marking out the railway property. In addition to such more or less plain boundary walls, it is sometimes necessary to provide retaining walls and structures similar to those shown in the accompanying illustrations of the layout of Mr. P. J. Howes, of Thornton Heath. The layout was described in the *M.M.* in July last, but it was not possible then to point out the many engineering features that help to give the layout such a realistic appearance.

As the railway is on two levels, a fair amount of special construction has been necessary in setting it up. For instance, buttressed retaining walls were needed, and those built show up well in our pictures. This sort of construction can be carried out with wood or even stout card, and many model shops are able to provide suitable printed papers representing brickwork in various styles that can be used to cover the wood or card surfaces effectively. In fact several firms who specialise in this type of thing advertise in the *M.M.*, so keep your eye on the advertisement pages.

You will notice that the subway entrance in the upper picture on this page is spanned by an effective girder construction. This

particular unit is built up of strip wood, but most Hornby-Dublo owners will have quite effective constructional material ready to hand in the form of Meccano Parts. A simple instance of what can be

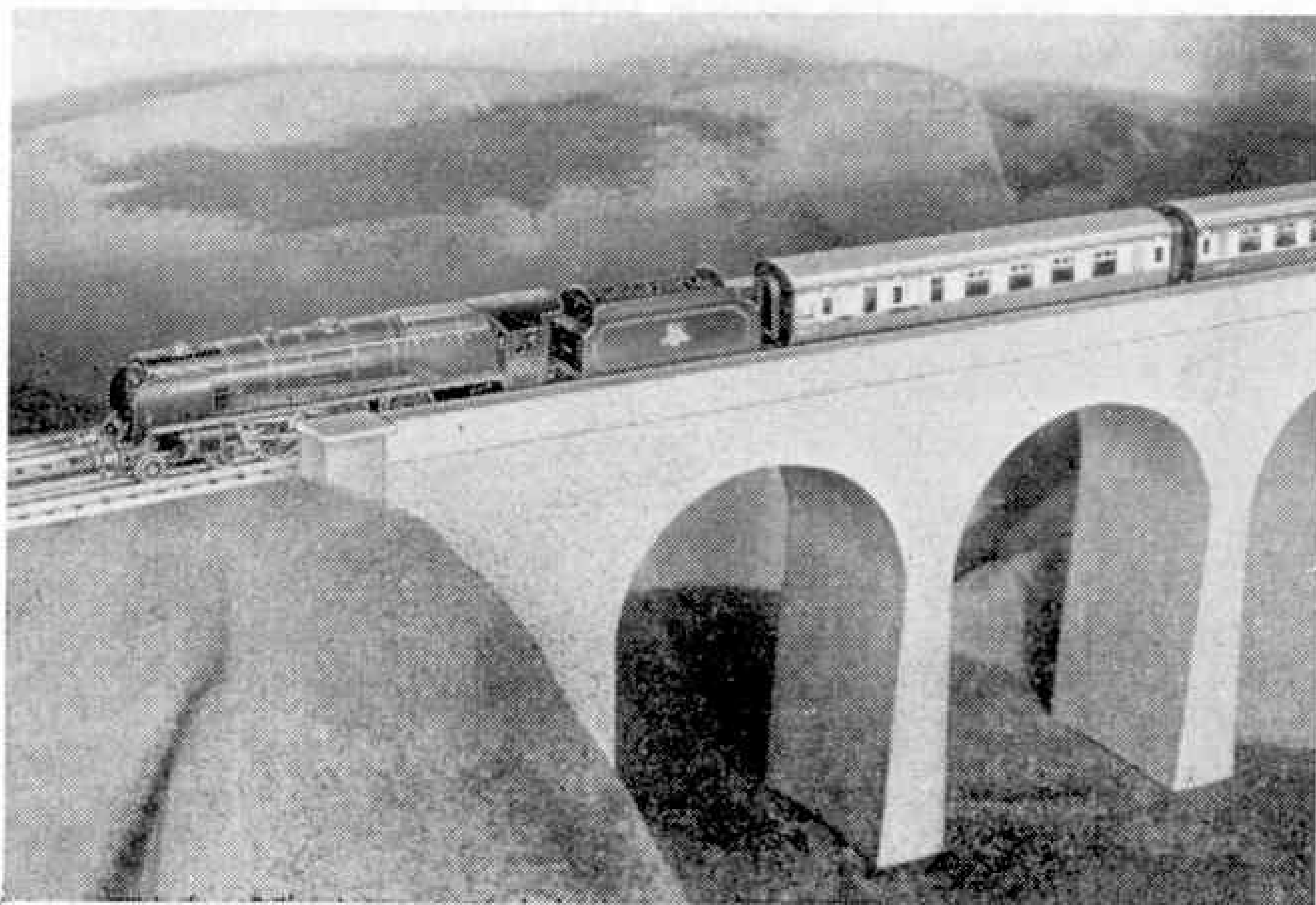


The main line passes into a subway on the layout of Mr. P. J. Howes, Thornton Heath, part of whose railway also appears in the lower illustration on the opposite page.

done with these is shown in the upper illustration on the opposite page. Of course, for things of this nature the owner of a permanent layout really has the advantage. Owners of a temporary track can include a Meccano bridge, for instance, if their layouts are long enough, for it is easy to build such a bridge in one piece or in one or two units that can be assembled quickly and easily. The necessary approaches too can be provided just as easily.

The mention of approaches reminds me that I am often asked about gradients on Hornby-Dublo railways. Gradients are things to avoid, generally, but they do become necessary if a layout is to incorporate high-level and low-level sections. A slope of 1 in 30 is the steepest that can be recommended for Hornby-Dublo Trains.

Duchess of Montrose brings a Hornby-Dublo express to cross a lofty arched viaduct in bleak country.



Hornby Engine-driving

MOST of us make our first acquaintance with miniature railways in running a clockwork locomotive. A Hornby Clockwork Locomotive is easy to handle, and if properly used will give reliable service for a long time. Many enthusiasts,

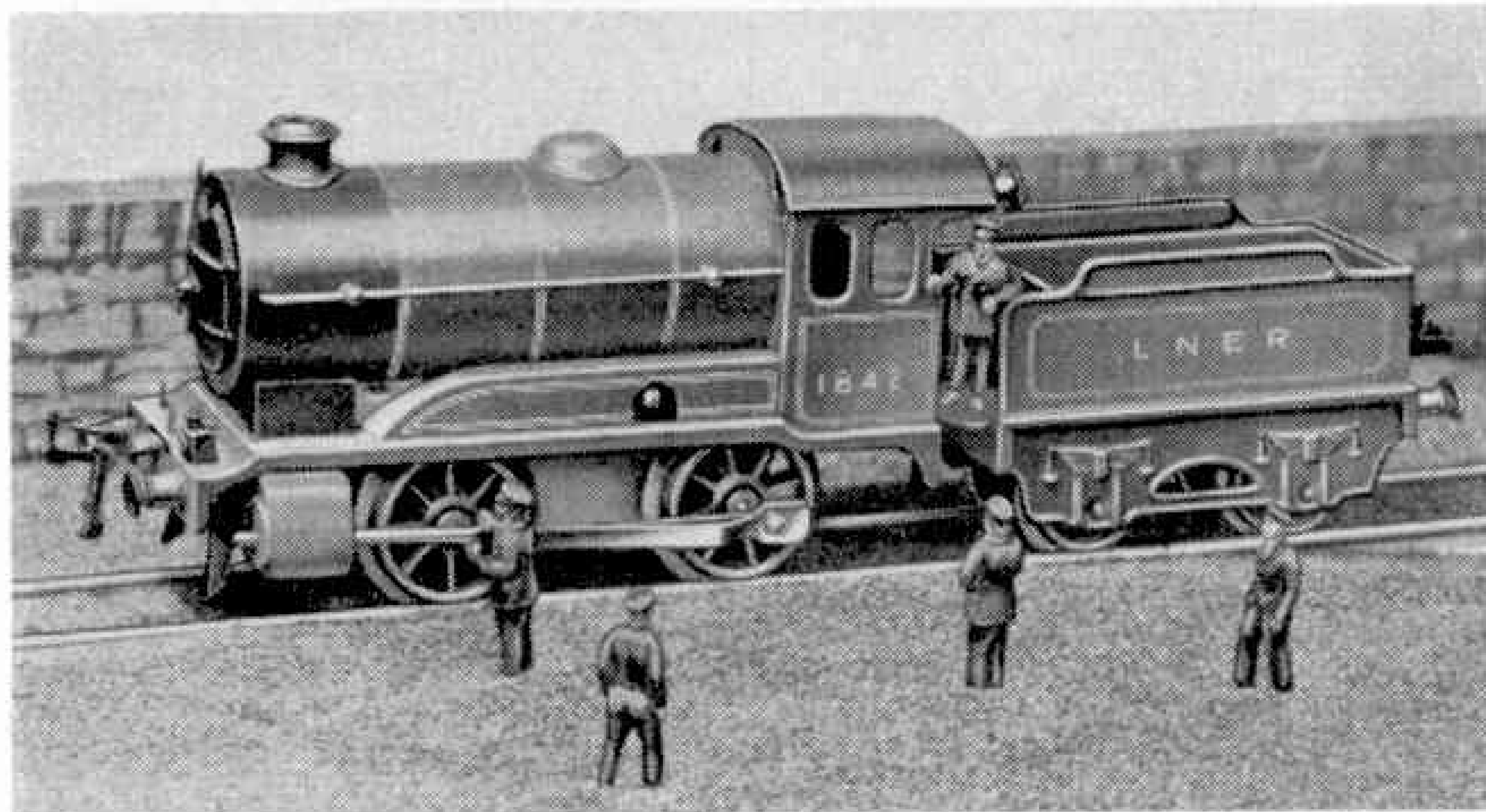
a tendency on the part of Hornby railwaymen and others to lift up an engine from the track while it is being wound up. This is quite unnecessary. The engine can be left coupled to its tender or train, and with the brake applied. One hand

must steady the engine while the other operates the key. When sufficient "wind" has been put into the mechanism the key is removed, the brake released and the train will go happily on its way.

The state of the track is important and the Hornby railwayman of experience knows this, but the beginner does not always realise how a rough or uneven track can affect the running of an engine. A level base is

necessary for the rails and it is essential to see that they are properly lined up at the joints and secured either by Rail Connecting Clips or Plates, according to the type of rails in use.

As an engine requires lubrication, so also does the train and a small drop of oil on each axle bearing lasts quite a long time. Engines, and rolling stock too, improve with use and proper care. Keep the rails and the wheels clean, see that the wheels turn freely, and your Hornby Train will last for ages.



The engine driver and other miniature railwaymen are busy about this Hornby 501 Locomotive before it begins duty.

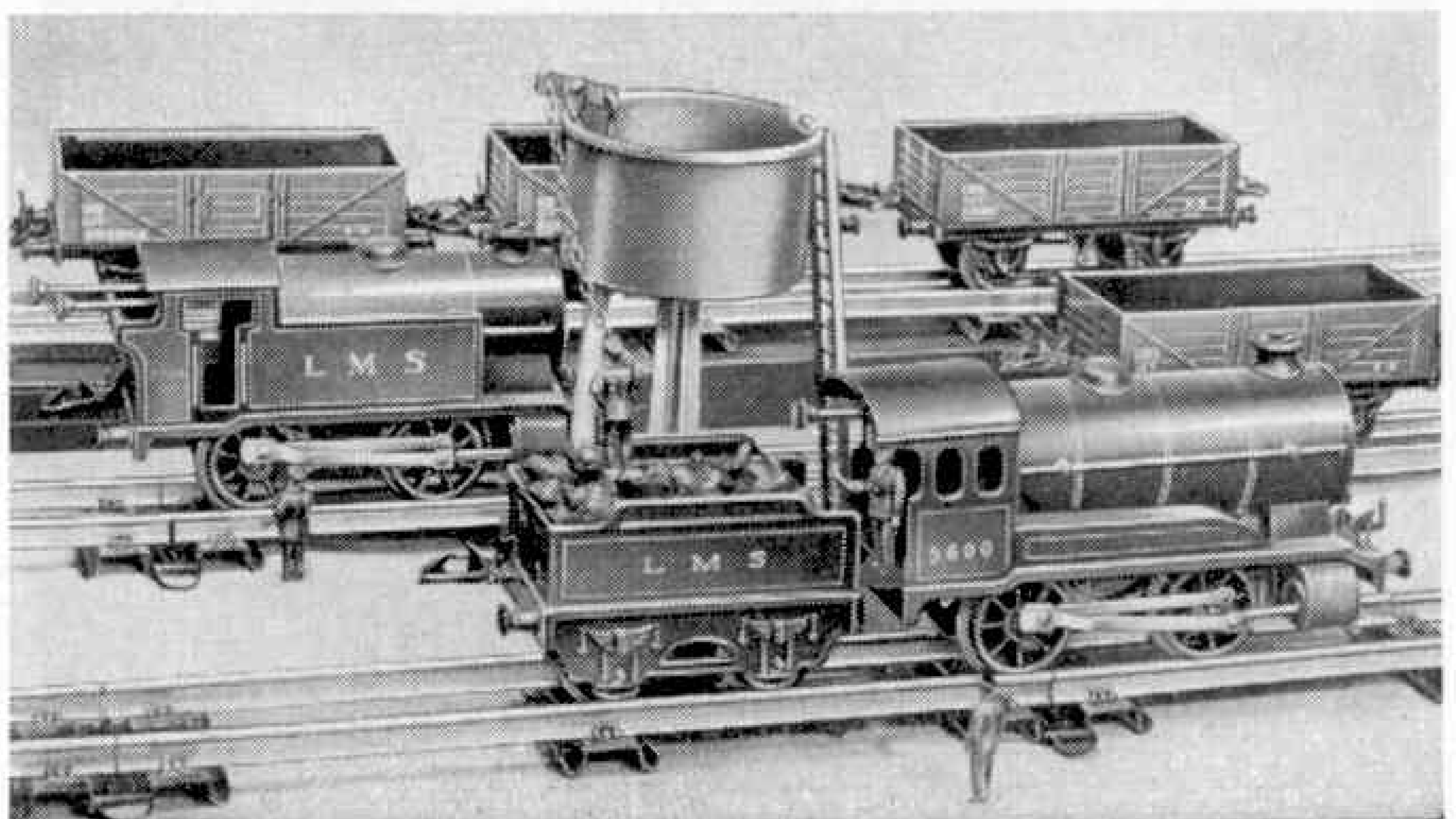
particularly those who practice timetable working on their railways, consistently use Hornby Clockwork engines as their motive power.

Hornby Clockwork engines have a special reputation for hard work and they need little in the way of attention in order to keep them going. The beginner soon becomes used to the capabilities of his engine and can work his trains accordingly.

A new engine of course does not run as well as one that has been in use for some time, because a new mechanism of any kind is always inclined to be stiff. With attention to oiling, however, and with careful use the performance of the engine will be improved as it becomes more "run in." Real engines too have to go through this "running in" period.

Sometimes there is

A necessary job in the engine yard; a Hornby 501 Locomotive "fills up" at the Water Tank between spells of hauling trains.



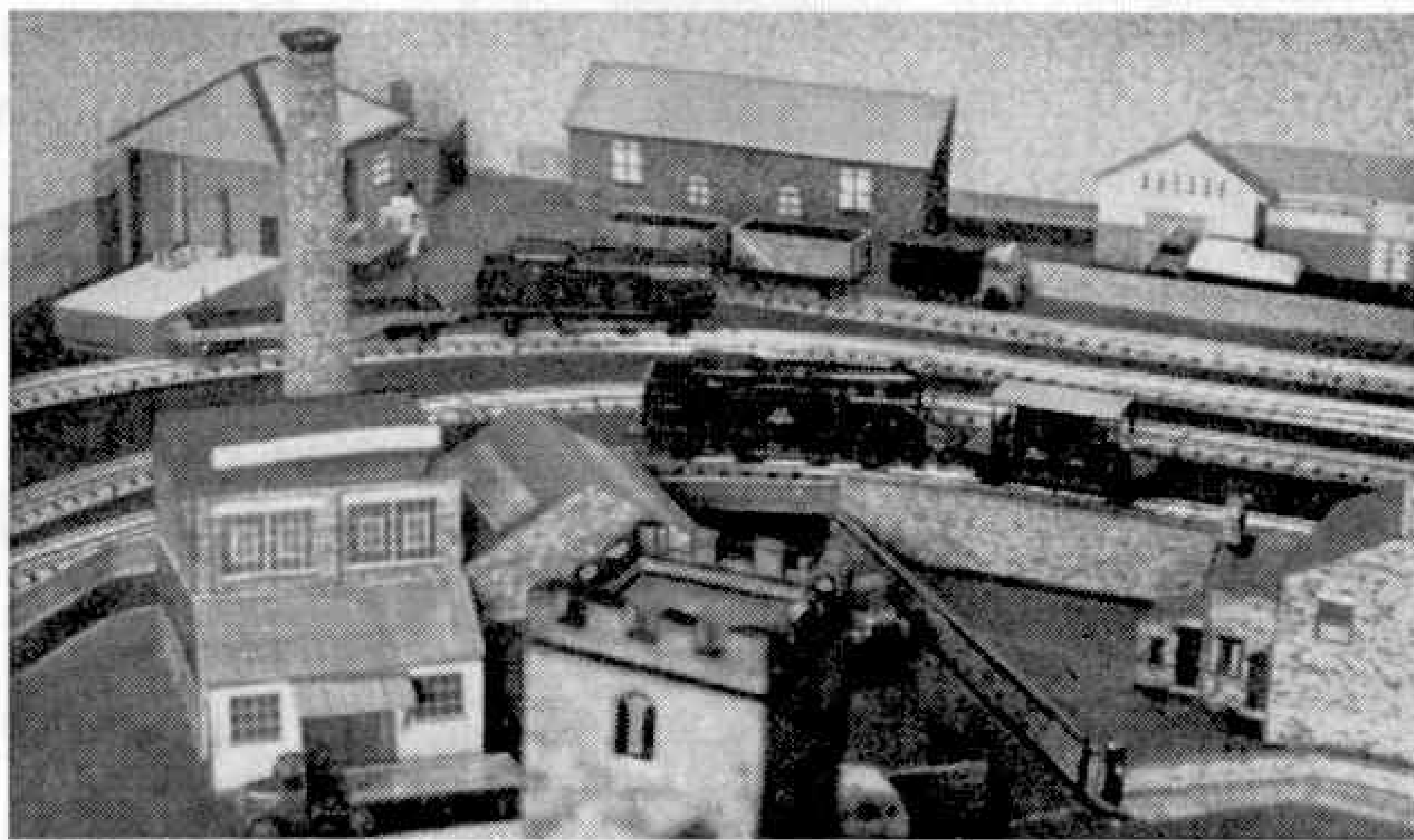
Realistic Traffic Working

WHEN a fairly generous area can be devoted to the development of a Hornby-Dublo layout it is easy to achieve great things in the field of traffic working in miniature. But a special advantage of the Hornby-Dublo System is the fact that a good track can be laid down in a comparatively small space and quite effective train running enjoyed on it.

Proof that this is so, and that the track itself need not be complicated, is given by the layout of Mr. P. Matthias, of Tunstall, part of whose system is seen in our upper illustration. This includes a straightforward main line with double track, and there is a lengthy loop that accompanies the main line for rather more than half the distance round the complete oval. Off this loop there are various sidings, such as the coal siding shown in the upper part of the picture. Their arrangement off the loop rather than off the main line allows shunting movements to take place quite clear of the main running track, the loop thus acting as a reception road and shunting spur combined.

This is the type of layout where an engine and Brake Van can set off along the main line and carry out shunting work

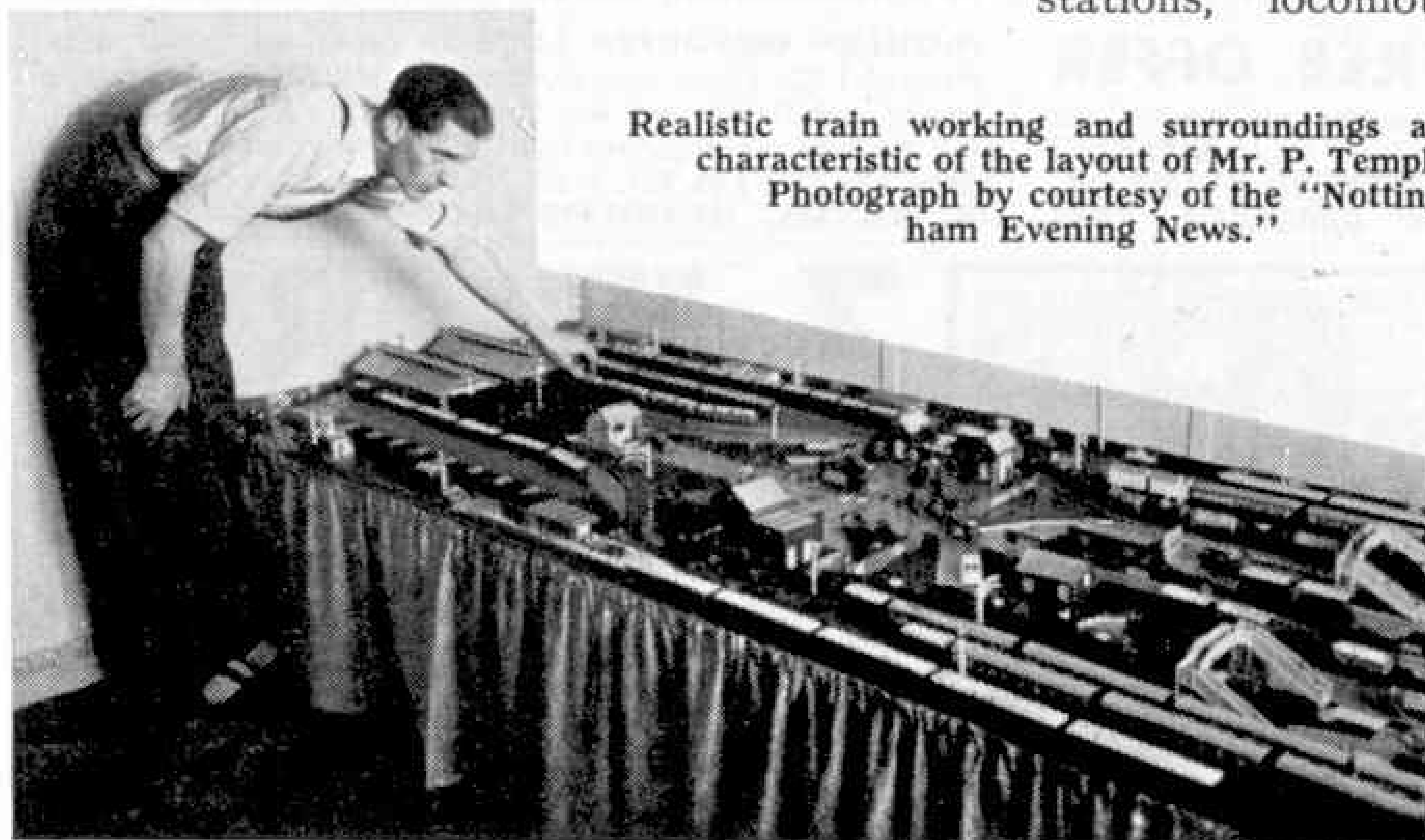
at various sidings on successive circuits. By degrees a complete train can be assembled, and after a more or less lengthy run along the main track the wagons can be distributed again by a similarly gradual process.



A realistic corner on the layout of Mr. P. Matthias, Tunstall. In the foreground the Tank Locomotive with a Brake Van is on its way to begin pick-up goods duties.

This working can be described as a typical everyday performance. Now let us turn to the more ambitious train working schemes possible on the lower layout illustration on this page. This is the work of a real railwayman, Mr. P. Temple, of Nottingham. It has the advantage of considerable length—11 ft. in all—so that not only is a good main line run afforded, but there is also plenty of space for other tracks serving passenger stations, locomotive sheds and other premises within the main oval.

This system needs plenty of engines and rolling stock and naturally there is plenty of variety. Notice, however, that the set train principle is widely applied. The passenger trains in the foreground are made up to run as complete units, as are coal and some other trains.



Realistic train working and surroundings are characteristic of the layout of Mr. P. Temple. Photograph by courtesy of the "Nottingham Evening News."

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For other Stamp Advertisements see also pages 46 and xix.

Stamp Collectors' Corner

By F. E. Metcalfe

ROYAL VISITS

ROYAL visits are in the air, and those who collect modern Commonwealth stamps are in the thick of it once more. Some have not yet digested all the

Coronation issues, so if they are not going to get left, they had better hurry on with their mounting, which shows once more how much better it is to collect with a plain album, so that one can keep abreast with the important mounting task, instead of having to wait months and months for leaves. Their hobby seems to have been singled out for special recognition, with so many countries that the Queen and Duke



of Edinburgh will visit issuing stamps in honour of their visit.

A quite nice Royal Visits collection can be formed already, starting with the special issue to commemorate a Royal Visit that came out in 1939, when the Dominion of Canada released three stamps on the occasion of the visit of King George VI and his Queen. Incidentally, used copies are common, and hitherto a mint set has not been thought to be worth more than a modest sum. But it is now being proved that these mint stamps have been under-rated. Get a set right now, if forming a collection of which they are part.

During the same trip Newfoundland was not overlooked, and the then oldest Dominion also paid philatelic honours to their welcome and distinguished visitors. Its contribution consisted of a single 5c. stamp, and later some of these were surcharged 2c. and 5c. These stamps seem to be going in an opposite direction to the Canadian set, for while the latter have been rising in price, quite a few Newfoundland have appeared on the market, and the three stamps can be obtained for five shillings or so. But a sharp rise could occur in the near future, caused by the publicity which they will now obtain.

And here is another word of warning. Special postmarks are to be found on these Newfoundland stamps, but the ink used is of a particularly soluble character and if the stamps are placed in water

these cancellations disappear altogether. One way to avoid this is to place some salt in the water used for the soaking off. This makes the ink quite fast.

The 1947 visit to South Africa provided the next Royal Visit philatelic rush, and South Africa itself issued three pairs of stamps, bearing portraits of the then Princesses Elizabeth and Margaret as well as of the King and Queen. There were also overprinted stamps for South West Africa, Southern Rhodesia,

Bechuanaland, Basutoland and Swaziland.

All kinds of minor varieties are to be found on the South Africa issue and two have been listed in the Commonwealth Catalogue. The most important from a philatelic



point of view has to do with the two cylinders used for the 2d. value. Those from Cyl. 6912 are worth a good deal more than those from Cyl. 39, and here is the easiest way of telling the difference. Examine the scroll above and below the word South Africa. If it has a bevelled appearance—that is if the outside edges are paler—you have the scarcer stamp. If the whole surface is plain, and of the same ink density, then you have Cyl. 69, which will be more likely, for they are much commoner. There are other means of distinguishing one cylinder from the other, and these are mentioned in the catalogue previously referred to.

Another interesting variety is catalogued as the "blinded princess." A smudge on the printing plate across the Princess's eyes is the cause of this variety, which is catalogued at 6/- against 9d. for the ordinary

stamp. It is the 3d. stamp on which the variety is to be found.

Incidentally, although the South African set was overprinted for South West Africa, only one cylinder, No. 6912, was used for the 2d. value of that set, so it will be possible to tell which South African stamp you have if you compare the overprinted with it.



Southern Rhodesia issued

two stamps only, the 1d. value with portraits of the Princesses and the 1d. value showing the King and Queen. The stamps are still obtainable for a few coppers, and some nice inexpensive covers also exist with very elaborate postmarks.

Basutoland, Bechuanaland and Swaziland shared the same designs, portraits of the Royal Family. Four values were concerned, 1d., 2d., 3d. and 1/-, and my, how collectors did go for them at the time! In 1947 there was no talk about there being no money about, and so many sets were bought of these stamps, and indeed of all the Southern African sets, that they can still be picked up at a fraction over face. But as I have already hinted, prices may go up now.

In 1951 Canada issued a 4c. violet stamp in honour of the visit of Queen Elizabeth and the Duke of Edinburgh, an attractive issue, which was so popular that it was heavily bought. But more about this and later Royal Visit stamps next month.





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A fine packet containing new issues bearing the Queen's Head. Just ask to see my 6d. in 1/- **DISCOUNT APPROVALS.**

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FREE N. ZEALAND HEALTH SET MINT this month to approval applicants. 2½d. postage.

A. CUNNINGHAM (MM), 36 DOONFOOT ROAD, AYR

For other Stamp Advertisements see also pages 44 and xix.

GREAT BRITAIN

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500 All diff.	4/9
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100 F. Cols.	2/6
25 Vatican	3/-
1000 All diff.	10/-

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N. Z. HEALTH SET FREE

This month all genuine approval applicants will receive **FREE** the attractive N.Z. Health set of 1953, depicting Boy Scouts and Girl Guides. Be sure to get this set. Send now enclosing 2½d. to cover postage.

H. B. LANG, BURNBANK, MAUCHLINE, Ayrshire

FREE—STAMPS CATALOGUED 5/-

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COX, 17 STONELEIGH PARK ROAD, EWELL

LOOK! 25 LARGE PICTORIAL STAMPS FREE

Just request our pictorial approvals. Postage 2½d.

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24 CATHERINE STREET, SHEFFIELD 3

FREE STAMPS ALL DIFFERENT INCLUDING TWO GIANT MINT TRIANGULARS

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and many other fine stamps. Request discount approvals enclosing 4d. for postage, etc. (Without approvals 1/3).

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STAMP PACKET FREE! 3 Colonial commems.

namely 1937 & 1953 Coronations and 1935 Silver Jubilee, with 33 other desirable stamps **FREE** to all requesting our fine approvals and sending 3d. postage.

HAND & SON, ROSEBURY ROAD, EPSOM

Stamp Gossip

QUEEN NEFERTITI

SOME collectors have been asking the meaning of the bars across the face of ex-King Farouk on all stamps on letters coming from Egypt recently. The answer is that there has been an official blacking out of the King's features. But here is a point to remember; as these lines have been applied officially the stamps thus defaced, literally, will probably be catalogued. So try and get a nice used set while they are obtainable at present low prices.

Although some of these barred stamps are still coming through, a new pictorial set has already been issued, and perhaps the most interesting of all the designs shows a bust of that beautiful Queen Nefertiti. This precious relic was discovered by a German archaeologist in 1912. He managed to get it to Germany, and for many years it was housed in the Berlin Museum. Later Germany promised to return it to Egypt, but it is said that Hitler refused to part with it, and when the war broke out it was stored with many other treasures in a salt mine. It is believed to be in American custody at the moment.

Queen Nefertiti was the daughter of King Dushratta of Syria, and the wife of Amenhotep IV, who ruled Egypt from 1375 to 1358 B.C. The bust is almost in perfect condition, and considering its age, is not that fantastic. I am sure that all collectors, even if they do not collect Egypt, will want a copy showing such a marvellous treasure. Fortunately used copies will only cost a copper or two.

INDUSTRIAL CANADA

This great country has issued another stamp to show what great strides it is making in industry. This time, on 2nd November, we got a new 50c. stamp, also overprinted G for official use.



As the Canadian Post Office states, the main element of the design displays on the left a bobbin, from which the threads unwind through an old-fashioned spinning wheel, to appear at the right as folded cloth. The spinning wheel was interposed to emphasise the tradition behind the textile industry. As can be seen from the illustration, the design is simplicity itself, yet it is an artistic gem, and further strengthens Canada's claim to be considered as one of the countries producing some of the world's most beautiful and appropriate stamps. I for one would not contest the claim, as regular readers of the M.M. already know.



STAMPS ON A STAMP

There are so many nice stamps coming out just now that it is a hard task to pick out those most worthy of note. But one always tries to confine comments to really interesting stamps that are within the reach of the average collector, such as the Mozambique item illustrated.

Now there are plenty of stamps with other stamps as the motif of their designs, but just look at this one, showing nine! It is one of two values issued by this Portuguese colony to commemorate the Philatelic Exhibition at Lourenço Marquez. The writer only visited that city once. That was many years ago, and there may have been many changes since then, but three things remain in memory. There were land crabs squirming all over the place, and moving too fast into the sand of the roads to be caught by amateurs; coconut trees so low, that we were able, greatly daring, we were informed later, to reach them—how good their milk was; and what was said to be the only Chinese temple in Africa. What happened there is another story. Anyhow, those who want this unique pair of stamps, will get them for about 1/8 the couple.

VAN DIEMEN'S LAND

Has there ever been a country with a more romantic name for British people than Van Diemen's Land, now known as Tasmania? Just one hundred years ago it issued a stamp, somewhat similar in design to the one now released to commemorate it, and right up to the present century it seems to have done little else than issue stamps. What with shades and perforation varieties, Tasmania is the philatelist's paradise, and it is said to be something of a paradise to live in as well; and as for its apples, well, we have all enjoyed those. But the average collector of today will have to be satisfied with the new commemorative, unless he has the patience of Job and a crock of gold at his disposal.

AUSTRALIA



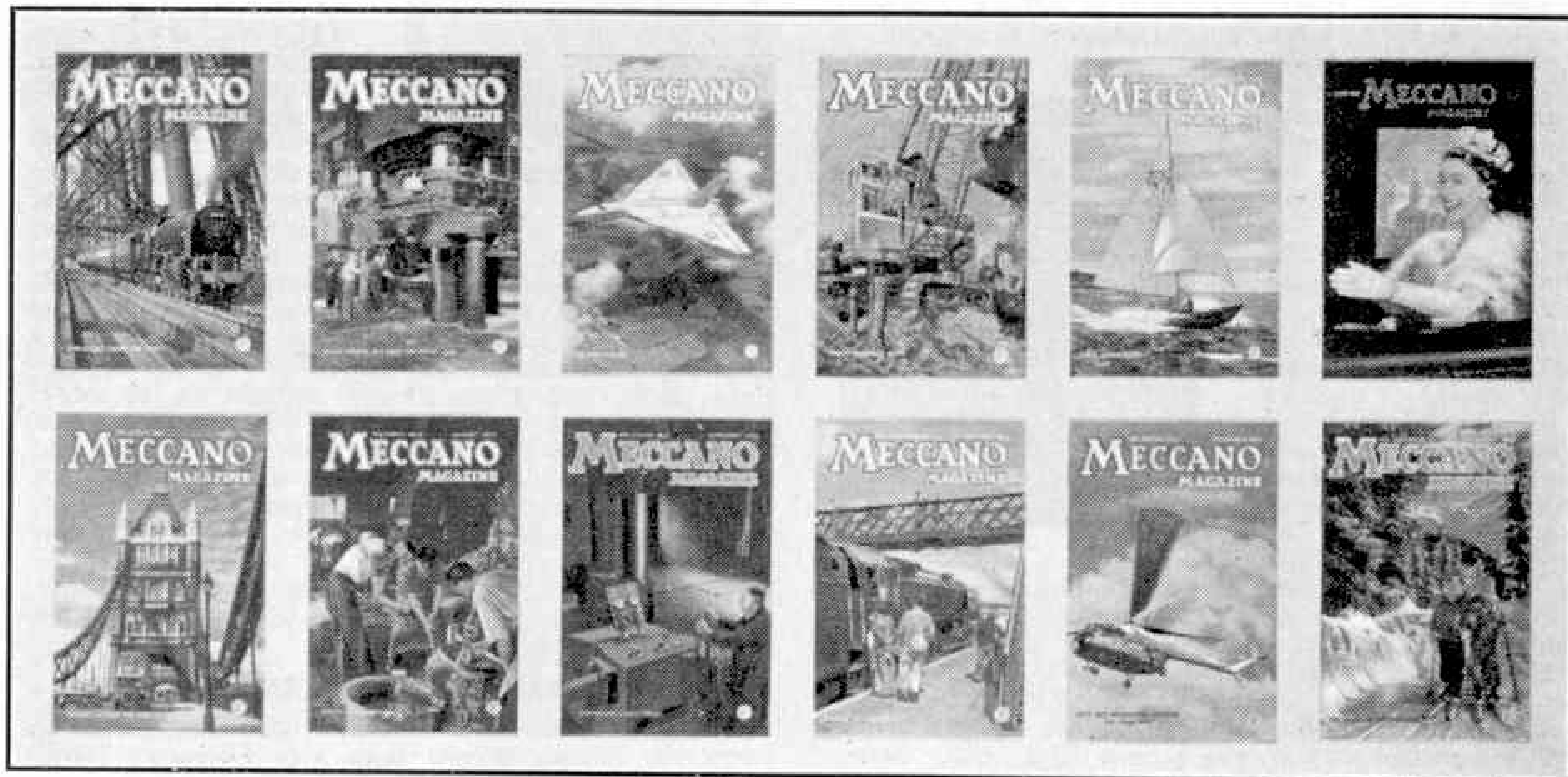
THE BIG EXHIBITION

Last January in London, the P.T.S., the largest and most important stamp trade society, and the Junior Philatelic Society staged an exhibition that was so successful, with 15,000 people attending, that it was decided to hold one in Central Hall, Westminster, this January. Heavy as was the attendance with the last show, many collectors of K.G. VI stamps were very disappointed to find that their favourites had been practically ignored; this time one third of all the frames have been set aside for issues of the present and the last reigns and the writer of these notes has been appointed to get those stamps together.

Competitions! Open To All Readers

Prize-winning entries in "M.M." competitions become the property of Meccano Ltd. Unsuccessful entries in photographic, drawing and similar contests will be returned if suitable stamped addressed envelopes or wrappers are enclosed with them.

Which is Your Favourite 1953 Cover?



January is the month in which we give readers the opportunity of telling us which of the previous year's *M.M.* covers they like best. By way of a reminder of what the subjects of the 1953 covers were, these are reproduced above on a small scale. The reproductions are in black and white, and of course give no idea of the brilliancy and colour of the originals.

Each entrant is invited to state, on a postcard: A, which of the 1953 covers he likes best; and B, in what order he thinks the covers will be placed by the combined votes of the competitors. The covers must be referred to by the names of the months

in which they appeared, and it is not necessary for a competitor to place his own choice at the head of list B.

There will be the usual sections in this contest, for Home and Overseas readers respectively, and in each prizes of 21/-, 15/- and 10/6 will be awarded for the best entries in order of merit, with consolation prizes for those who just fail to secure one of the principal awards. Entries should be addressed *1953 Cover Voting Contest, Meccano Magazine, Binns Road, Liverpool 13*. The closing dates in this contest are 27th February in the Home Section and 31st May in the Overseas Section.

Draw this Railway Scene

Every reader of the *Meccano Magazine* must often have stood at the outer end of a station platform, watching trains generally, and examining in particular the locomotive of a train about to depart, especially if the scene has been an important terminus and the engine one of the modern giants. Our second competition this month asks you to take this viewpoint and draw what you see just before the departure of a train.

There is scope in this contest for some really good, imaginative entries, and the judges will award prizes to those whose

drawings or paintings portray the scene in the most life-like manner. Each drawing must have on the back the name, age and address of the competitor, and there is no limit to the number of efforts that one entrant can send. There will be two sections, for Home and Overseas readers respectively, and in each prizes of 21/-, 15/- and 10/6 will be awarded, with consolation prizes for other good efforts.

Envelopes containing entries should be addressed *January Railway Drawing Contest, Meccano Magazine, Binns Road, Liverpool 13*. The closing dates are as follows: Home, 27th February 1954; Overseas, 31st May 1954.

Competition Results and Solution

HOME

AUGUST 1953 LOCOMOTIVE CONTEST

1st Prize: A. D. Parkes, Hampton Poyle. 2nd Prize: R. K. Houston, Paisley. 3rd Prize: J. McMillan, Hurlford. Consolation Prizes: V. Tarrant, Manchester 8; F. H. Tatam, Spalding; A. M. Lawrence, London N.W.11.

AUGUST 1953 DRAWING CONTEST

1st Prize, Section A: J. Radford, West Bridgford; Section B: J. Silk, Great Malvern. 2nd Prize, Section A: P. M. Stoneham, Barrow-in-Furness; Section B: C. S. Cox, Wembley. 3rd Prize, Section A: M. Caldwell, Torquay; Section B: I. Burnett, Cosham. Consolation Prizes: A. O'Dell, Cambridge; J. Owen, Huyton; J. Abey, Grimsby; N. Pyper, Little Common.

AUGUST 1953 PHOTOGRAPHIC CONTEST

1st Prize, Section A: M. E. Ware, Exeter; Section B: J. D. Lambe, Sheffield. 2nd Prize, Section A: A. Hamilton, Hale; Section B: D. Childs, Stanmore. 3rd Prize, Section A: R. Martin, Sharpthorne; Section B: R. Williams, Southport. Consolation Prizes: J. A. Fitchett, Farnworth; P. W. Brough, Cheam; P. Browning, Edinburgh 11; O. Riches, Surbiton; J. K. Jones, Kegworth; D. W. March, Dalton-in-Furness.

SEPTEMBER 1953 PHOTOGRAPHIC CONTEST

1st Prize, Section A: J. W. Whitelaw, London N.2; Section B: K. W. Gibson, Cheadle. 2nd Prize, Section A: F. G. Reynolds, Sidecup; Section B: T. R. Cookson, Bournemouth. 3rd Prize, Section A: D. M. Mitchell, Reigate; Section B: C. W. Hird-Jones, Upton-by-Chester. Consolation Prizes: S. Redhead, Hull; D. A. Abbot, North Harrow; P. Wilson, Belfast; S. Pawlyn, Tuddenham; G. D. Parkin, Hampton-on-Thames; T. Davidson, Corby; D. W. Allan, Rock Ferry; D. Trickett, Sheffield.

SEPTEMBER RAIL TOUR CONTEST

1st Prize: E. G. Rudkin, Chaddesden. 2nd Prize: I. J. Smith, Old Hartford. 3rd Prize: B. E. Timmons, Birmingham 24. Consolation Prizes: R. Fletcher, Bolton; M. R. Davidson, Manchester 9; A. K. Murphy, Carlisle.

OVERSEAS

MAY 1953 SLOGANS CONTEST

1st Prize: J. Burgess, Gibraltar. 2nd Prize: S. Henshaw, Wellington, N.Z. 3rd Prize: J. H. Lewes, Durban, South Africa. Consolation Prizes: A. Stroud, Invercargill, N.Z.; I. Da Craig, Apollo Bunder, Bombay, India; S. T. Myers, Perth, Australia.

MAY 1953 AIRCRAFT CONTEST

1st Prize: A. J. Brown, Otago, N.Z. 2nd Prize: R. V. Lewis, Buenos Aires, Argentina. 3rd Prize: S. R. Whyte, Dunedin, S.W.1, N.Z. Consolation Prizes: I. Spring, Cape Town, South Africa; A. George, Melville, W. Australia; D. F. Hegarty, Dublin, Eire.

MAY 1953 PHOTOGRAPHIC CONTEST

1st Prize, Section A: C. McKeown, Berlin, Germany; Section B: M. Bell, Fandra, M.E.L.F. 15. 2nd Prize, Section A: W. Wyke, Durban, S.A.; Section B: P. N. Veiriere, Antwerp, Belgium. 3rd Prize, Section A: M. Mitchell, Ansonia, U.S.A.; Section B: J. Sexton, Limerick, Eire. Consolation Prizes: T. E. de Jong, Amsterdam, Holland; T. A. Harrison, Christchurch, N.Z.; A. Chowdhury, Shillong, India; D. Wright, Sydney, Australia.

JUNE 1953 PHOTOGRAPHIC CONTEST

1st Prize, Section A: D. Leah, Karachi, Pakistan; Section B: J. S. Moreland, Montreal, Canada. 2nd

Prize, Section A: H. Jensen, Oslo, Norway; Section B: A. T. Golding, Valletta, Malta, G.C. 3rd Prize, Section A: M. Savva, Athens, Greece; Section B: J. Mullen, Copenhagen, Denmark. Consolation Prizes: C. Dalzell, Colombo, Ceylon; D. Kershaw, Lisbon, Portugal; D. Joynt, Blackrock, Eire; V. Peblo, Naples, Italy.

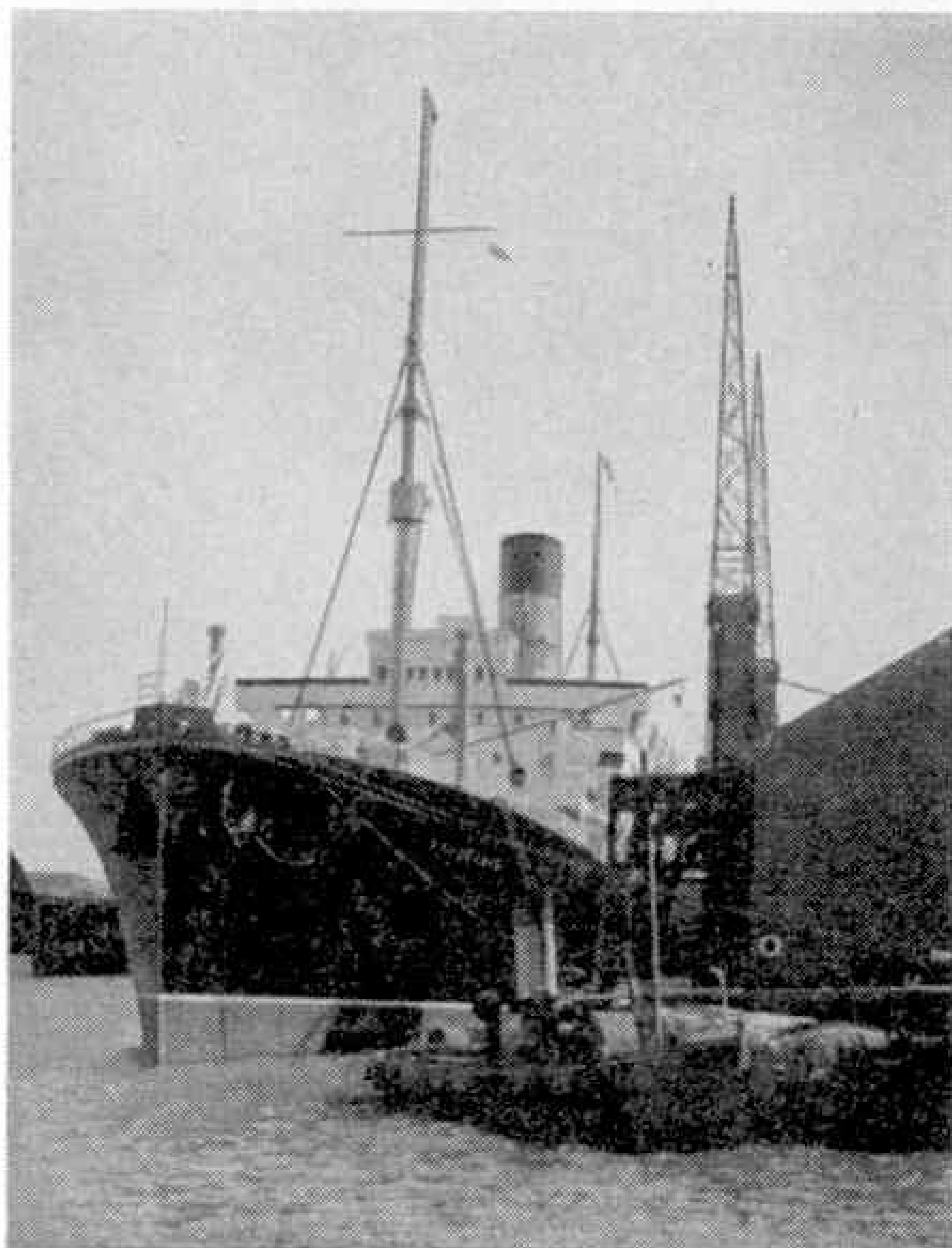
JUNE SIGNALLING CONTEST

1st Prize: L. G. Poole, Melbourne S.E.5, Australia. 2nd Prize: P. Cazaubon, Buenos Aires, Argentina. 3rd Prize: A. Davidson, Dublin, Eire. Consolation Prizes: W. Whitecross, Melbourne, Australia; J. A. Gomes, Bombay 20, India.

SOLUTION

JUNE 1953 SIGNALLING CONTEST

1. "Home" signal arms are square ended and painted red with a vertical white stripe. "Distant" signal arms are notched at the outer end and painted yellow with a black, vee-shaped band. 2. Black. 3. A bridge spanning several tracks for the purpose of carrying signal posts. 4. An ordinary signal arm placed low down on the post which repeats the movements of the main arm, so that the position of the latter can easily be ascertained in fog and bad visibility. 5. Shunting purposes, indicating that a movement can be made past it without the signal being "pulled off." If the signal is in the "off" position it refers to a movement out on to the main line only. 6. To prevent more than one train being in one section at the same time. 7. When signals are in the "on" position a white back-light is visible. 8. The signal on the taller post refers to the main line. 9. The line is track circuited. 10. To ensure that the signal is clearly visible where the background might render the view of the signal indistinct.



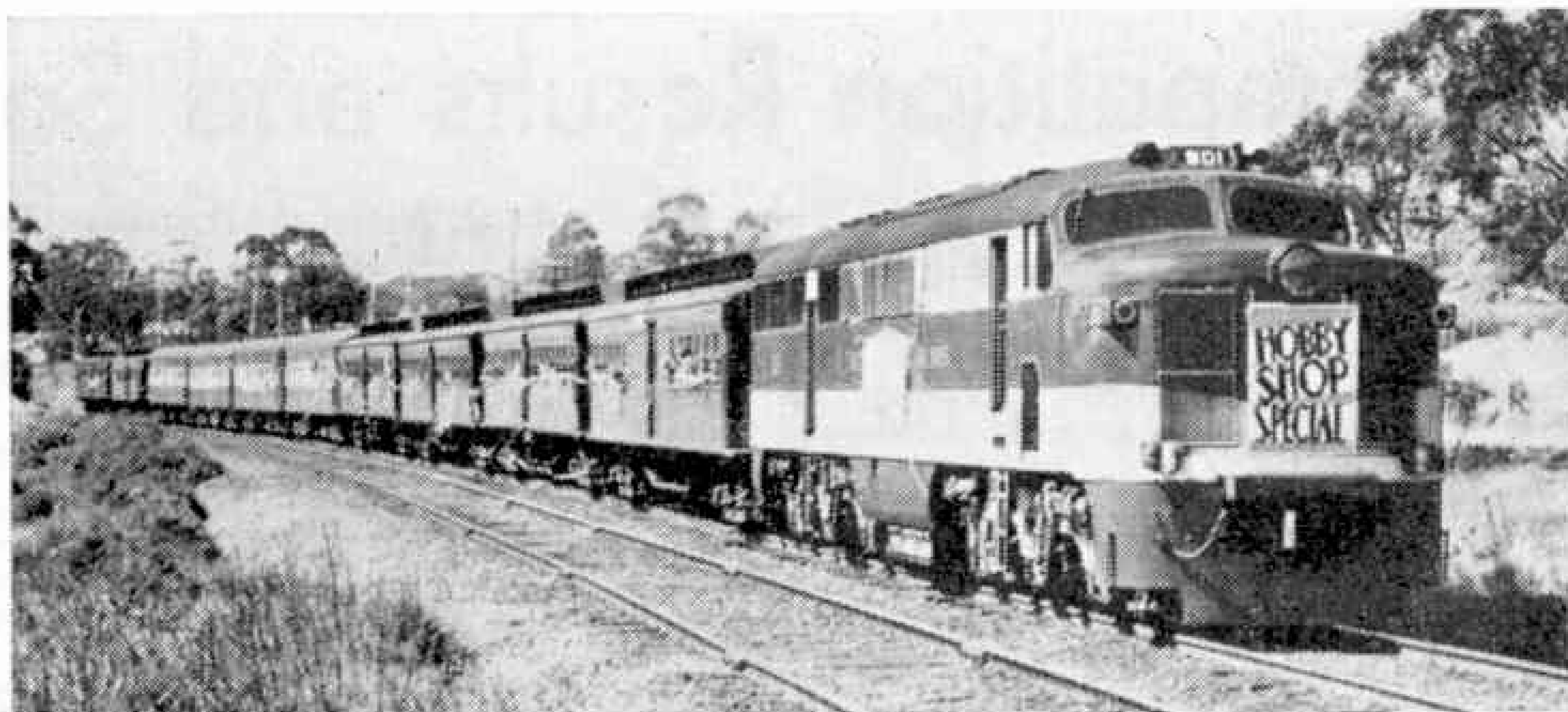
"A Cunard liner in dock." A really good effort by Roger E. B. Young, aged 14, of Liverpool, who was awarded a consolation prize in the October 1953 Photographic Contest, Section B.

A New Meccano Loom—

(Cont. from p. 39)

1 of No. 16a; 4 of No. 16b; 5 of No. 18a; 2 of No. 18b; 2 of No. 21; 4 of No. 22; 1 of No. 23a; 5 of No. 24; 1 of No. 25; 4 of No. 26; 2 of No. 27a; 1 of No. 27b; 1 of No. 27c; 1 of No. 28; 1 of No. 32; 12 of No. 35; 172 of No. 37a; 120 of No. 37b; 154 of No. 38; 3 of No. 43; 2 of No. 48; 5 of No. 48a; 2 of No. 48c; 2 of No. 52a; 3 of No. 57c; 24 of No. 59; 4 of No. 62; 1 of No. 62a; 4 of No. 62b; 8 of No. 63; 1 of No. 63c; 2 of No. 64; 1 of No. 78; 2 of No. 80c; 2 of No. 94; 2 of No. 95; 2 of No. 95a; 4 of No. 96; 2 of No. 96a; 60 of No. 101; 4 of No. 103; 2 of No. 106; 3 of No. 108; 4 of No. 109; 3 of No. 111; 6 of No. 111a; 24 of No. 111c; 3 of No. 111d; 2 of No. 120b; 1 of No. 126a; 2 of No. 128; 4 of No. 133; 1 of No. 136a; 1 of No. 144; 2 of No. 147b; 2 of No. 161; 4 of No. 166; 2 of No. 179; 2 of No. 186; 5 of No. 186a; 1 of No. 213; 1 E20R Electric Motor.

The parts used in the Beaming Frame should be clear from the illustrations.



The third annual mystery train trip organised by Hobby Shop Ltd., Meccano dealers in Adelaide, South Australia, involved the running of the Hobby Shop Special shown in this picture. This was the first occasion on which a diesel-electric locomotive was used for the train.

FLASHLIGHT PHOTOGRAPHY COMPETITION

Flashlight photography is becoming increasingly popular, and readers who are interested in this fascinating branch of photography will welcome the news that Johnsons of Hendon Ltd., the well-known makers and distributors of photographic chemicals and apparatus, have announced a new competition solely for flashlight photography. Cash prizes to a total value of £100 will be awarded as follows: Three first prizes of £10 each; Five second prizes of £5 each; Eight third prizes of £3 each; Twenty-four prizes of one guinea each, and Consolation prizes for other good efforts.

The photographs can be taken by any form of flash — open, synchronised, electronic or even flashpowder—and they can be indoor or outdoor, daylight or night time pictures. The only conditions are that the photographer must have performed the processing of either the negative or the print himself. The prints must be postcard-size or larger, and preferably should be mounted. There is no entry fee, but a label from a Johnson product should be sent with each entry, which is limited to six prints from any one competitor.

A leaflet giving full details of the competition can be obtained from any photographic dealer or chemist, or direct from Johnsons of Hendon Ltd., Hendon Way, Hendon, London N.W.4.



The rather jovial snow clock seen in this picture, from a photograph by C. D. Mason, London E.12, is an example of the use of snow made in certain parts of Switzerland for publicity purposes.

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Fireside Fun

"This bit of wood is full of holes."
 "They're knot holes."
 "Oh! They look just like holes to me."

"I say, Smith, how on earth did you get such Christian names as Handel Barr?"

"Easy! My father was a great cyclist and my mother a music enthusiast."

"You know, waiter, if a fellow thinks only of eating and drinking, there is nothing to distinguish him from an animal."

"Oh yes, there is, sir," replied the waiter.

"Then what is it, I'd like to know."

"He has to pay the bill, sir."

Teacher: "Anything abstract can be thought of, but not touched. Now, can you give an example, Tommy?"

Tommy: "Yes, miss. A red-hot poker."

"Can you think of a motto for a professional boxer?"
 "Easily. Every clout has its silver lining."

"Did you ever see horses with eight feet?"

"Of course not, silly. Did you?"

"Yes. There were two of them."

"What do you sell?"

"Salt."

"I'm a seller, too."

"Shake!"

"Where do you wash in this camp?"

"Oh, in the spring."

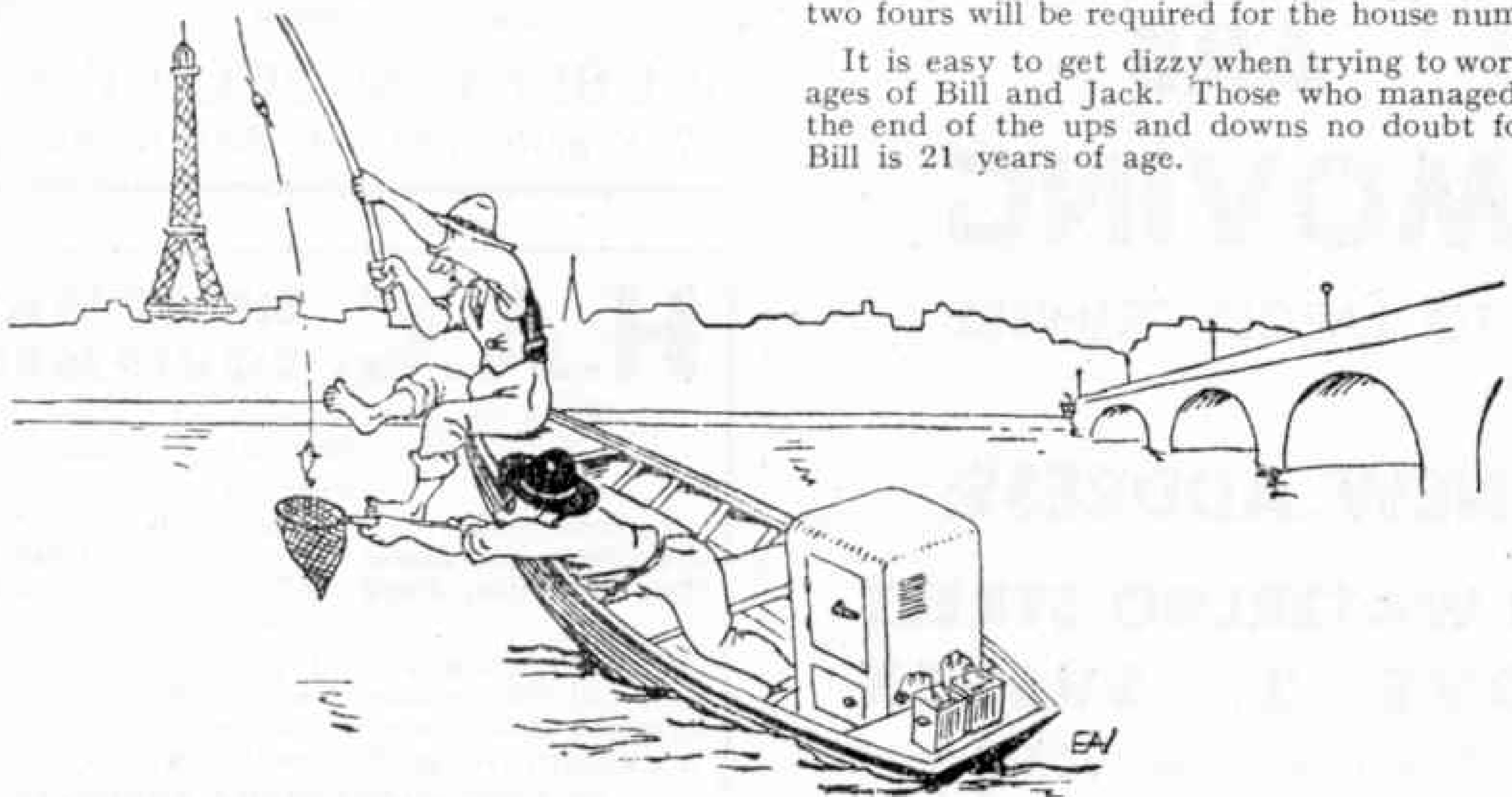
"I said where, not when!"

"No, you can't have an ice. It's too cold for that today."

"But I can put my coat and muffler on, mum."

"Now, look, my boy. I only want somebody smart. Are you quick at taking notice?"

"Yes, sir, had it three times in a fortnight."



"Got it! Hurry up and we'll make our fortunes."

BRAIN TEASERS

CROSS NUMBERS

Here is an interesting cross-number puzzle, in which a figure must be placed in each vacant square.

The figures must satisfy the following clues:

Across: 1, Square of 7; 2, Odd and Prime; 3, Another Power of 7; 5, Square the number 19 and Reverse it; 7, An Odd Number. Down: 1, Add 6 to 1 Across; 4, Square of 6 Down; 6, Begins with 2 Across.

1			2
3		4	
	5		6
7			

J.D.

AN EVEN BREAK

After setting up the names of 10 well-known men in type, the compositor dropped his work on the floor. To his surprise the names broke up into syllables, 20 of them, as shown below. Otherwise, of course there could have been no puzzle! Can you restore the names of the ten men? The capitals have been missed out to make it harder.

At, be, mer, mat, ed, but, church, bed, fin, thews, rich, ney, ser, rick, ill, ler, ton, van, hut and lee.

CROSS MATCHES

Put eight matches down in a row, as shown in the drawing below:



From the eight matches make four crosses in four moves. In each move one match must be carried over two others and placed across the third.

S.W.C.

SOLUTIONS TO LAST MONTH'S PUZZLES

Unsquaring the letters would probably be found easy by most readers. The trick is to begin with the letter in the central square, and move either vertically, horizontally or diagonally to one letter after another, when the proverb "Too many cooks spoil the broth" can easily be spelled out.

The numbers of the houses of our second puzzle of course must all be even, and the number of fours required is ten. This sounds simple, but in their first attempts most of those who try the puzzle forget that two fours will be required for the house numbered 44.

It is easy to get dizzy when trying to work out the ages of Bill and Jack. Those who managed to reach the end of the ups and downs no doubt found that Bill is 21 years of age.

Gamages 68-Page TRAIN BOOK

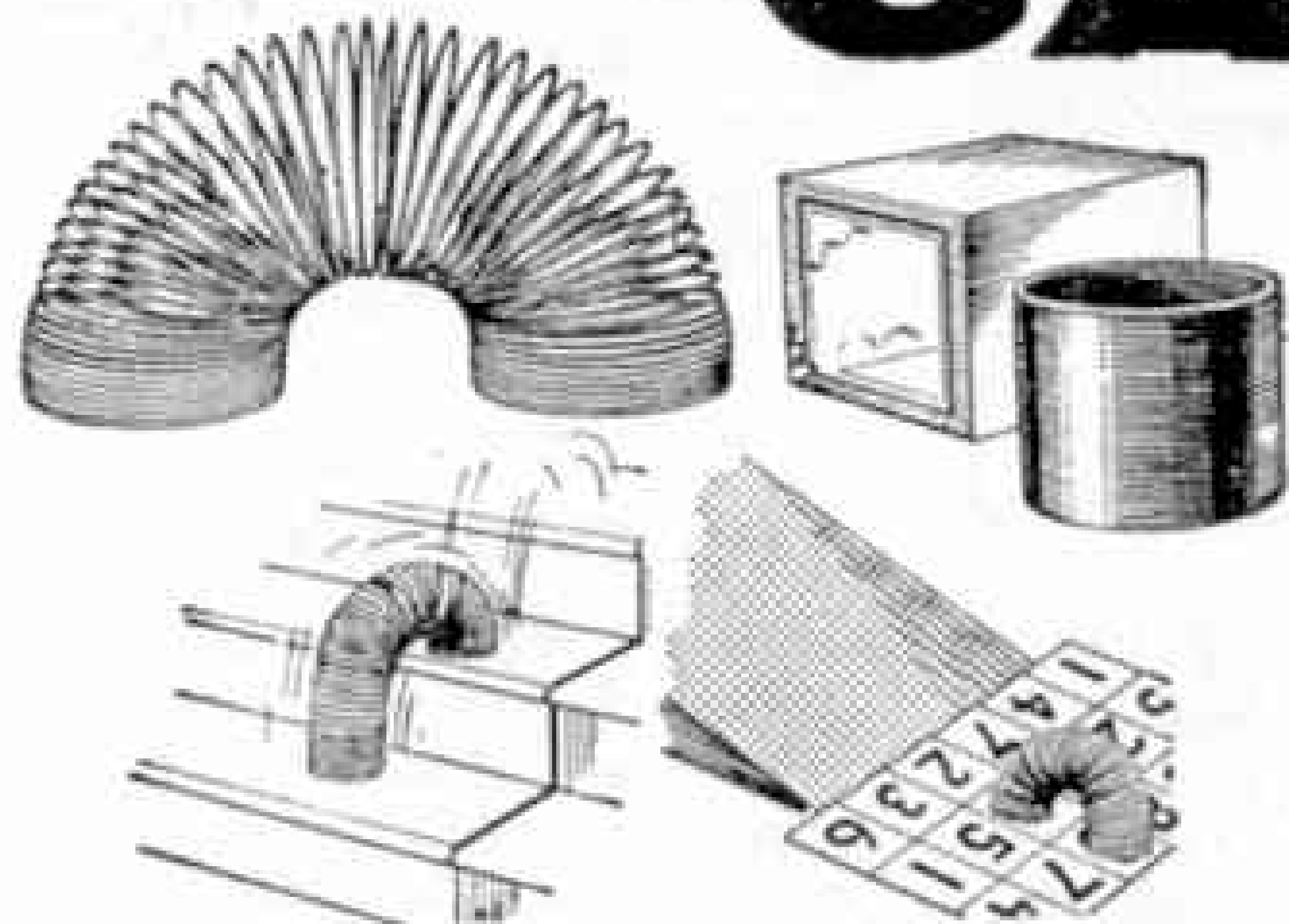
Packed with facts and details of GAMAGE, TRIX, TRI-ANG, HORNBY, FLEISCHMANN, MARX, LIONEL TRAINS, etc., etc. Railway Track, Lineside Models, etc. From this book you can plan and build your own Model Railway. (Post 3d.) **1/-**

Gamages NEW Conjuring Catalogue

Fully illustrated. Packed with details of thousands of Jokes and Tricks, including make-up, wigs, puppets, books, etc. **68 PAGES PRICE 1/-** (Post 3d.)

GAMAGES

offer you the famous "SLINKY"
The original and incredible Magic Spring

**HERE ARE A FEW EXAMPLE TRICKS!**

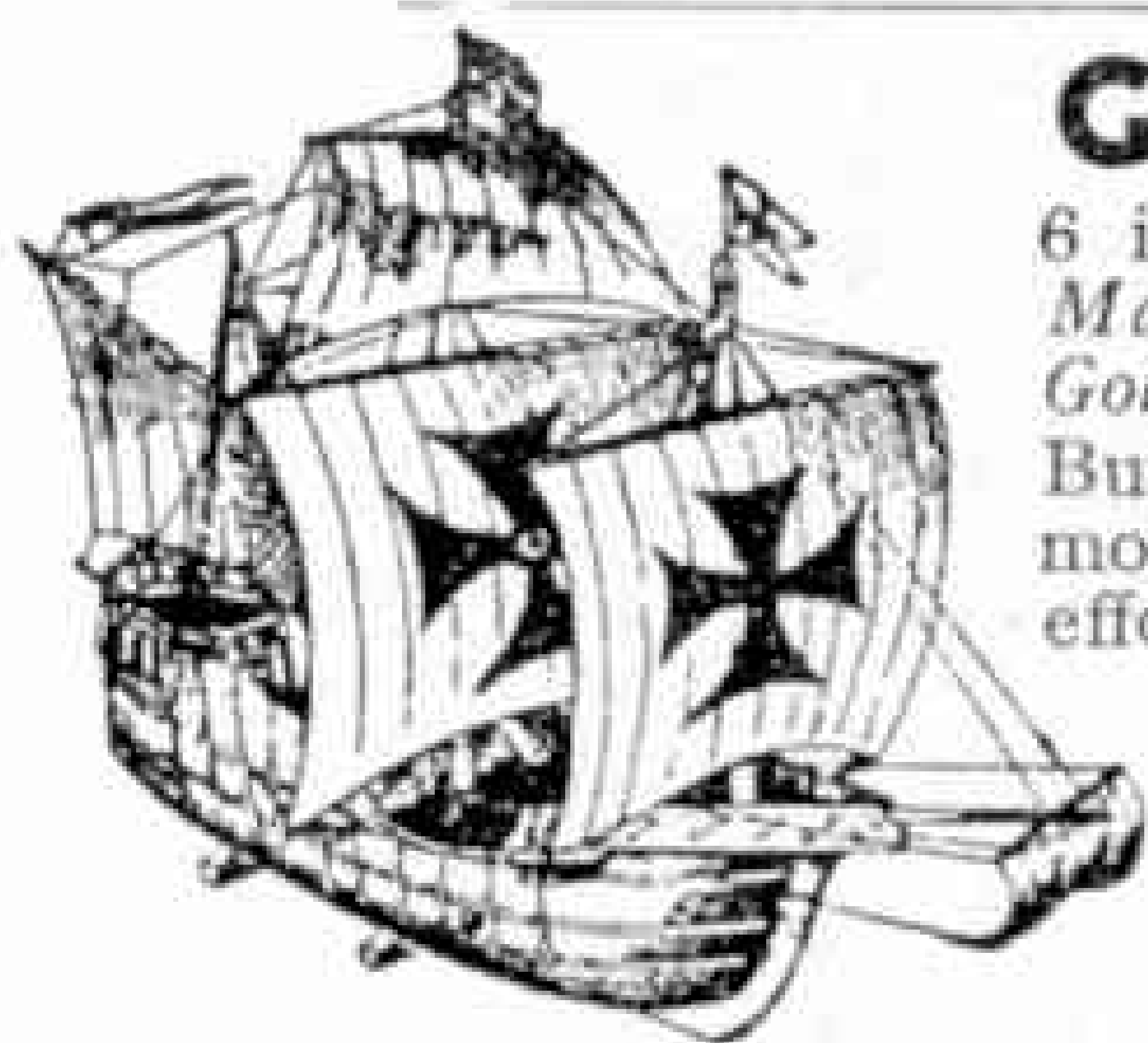
Put Slinky at the top of the stairs, place a few of his coils on the next lower stair and then watch him WALK DOWN THE ENTIRE FLIGHT unaided! Place him on a sloping board and see him walk down it in a similar fashion. Incidentally, he loves walking down a pair of Household Steps. No Motors, nothing to break, nothing to wear out.

He's yours for **5/11**
Post and packing 9d.

GALLEON KITS

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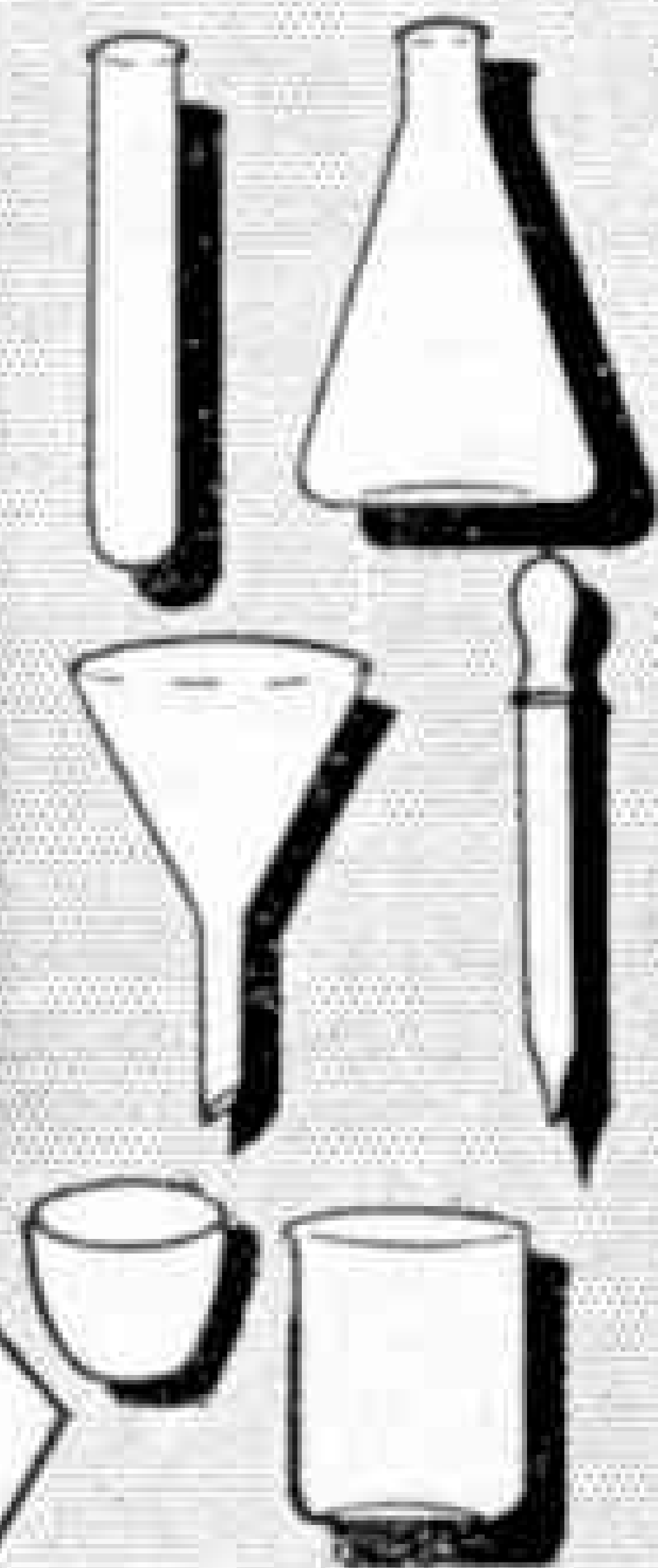
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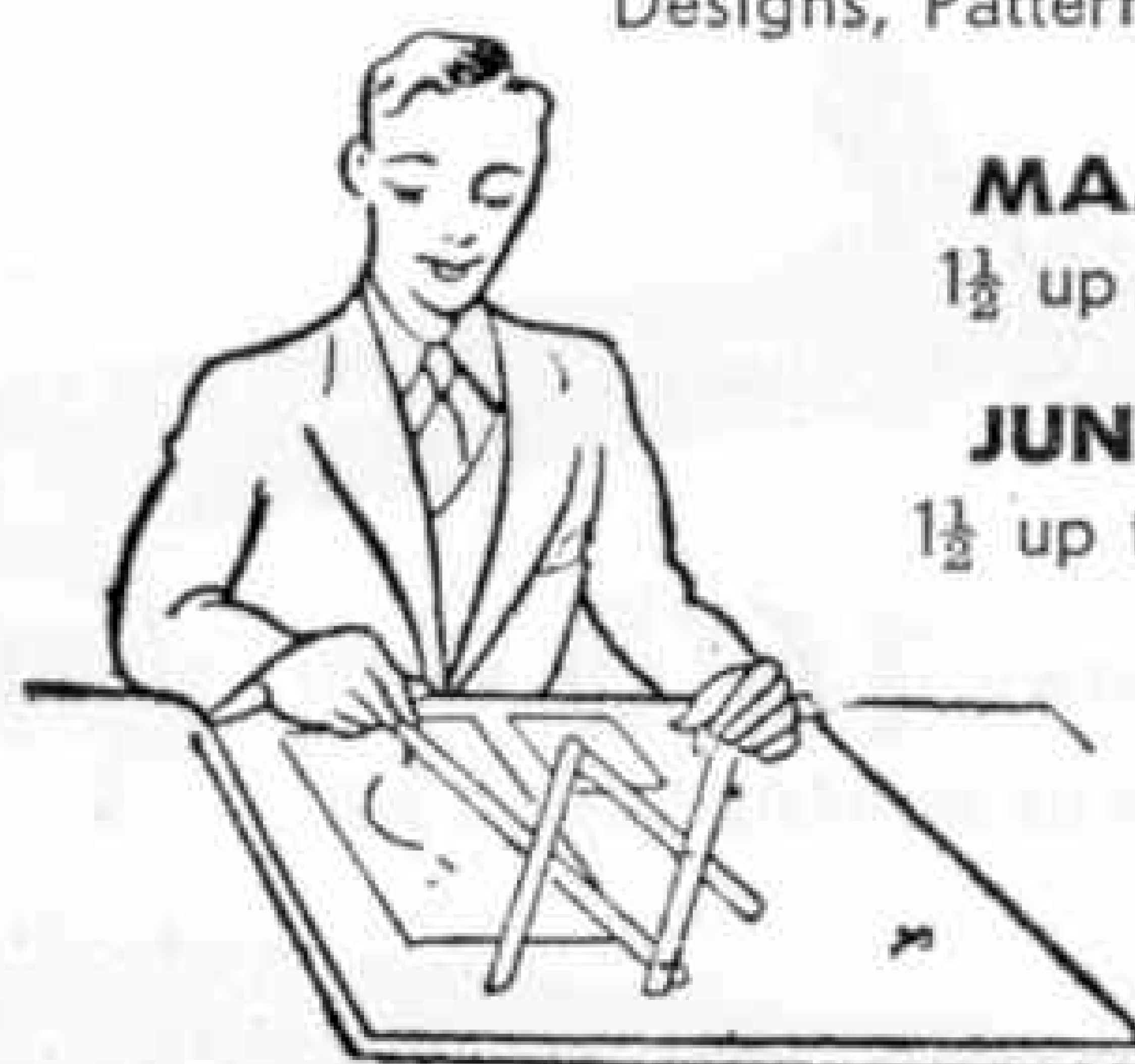
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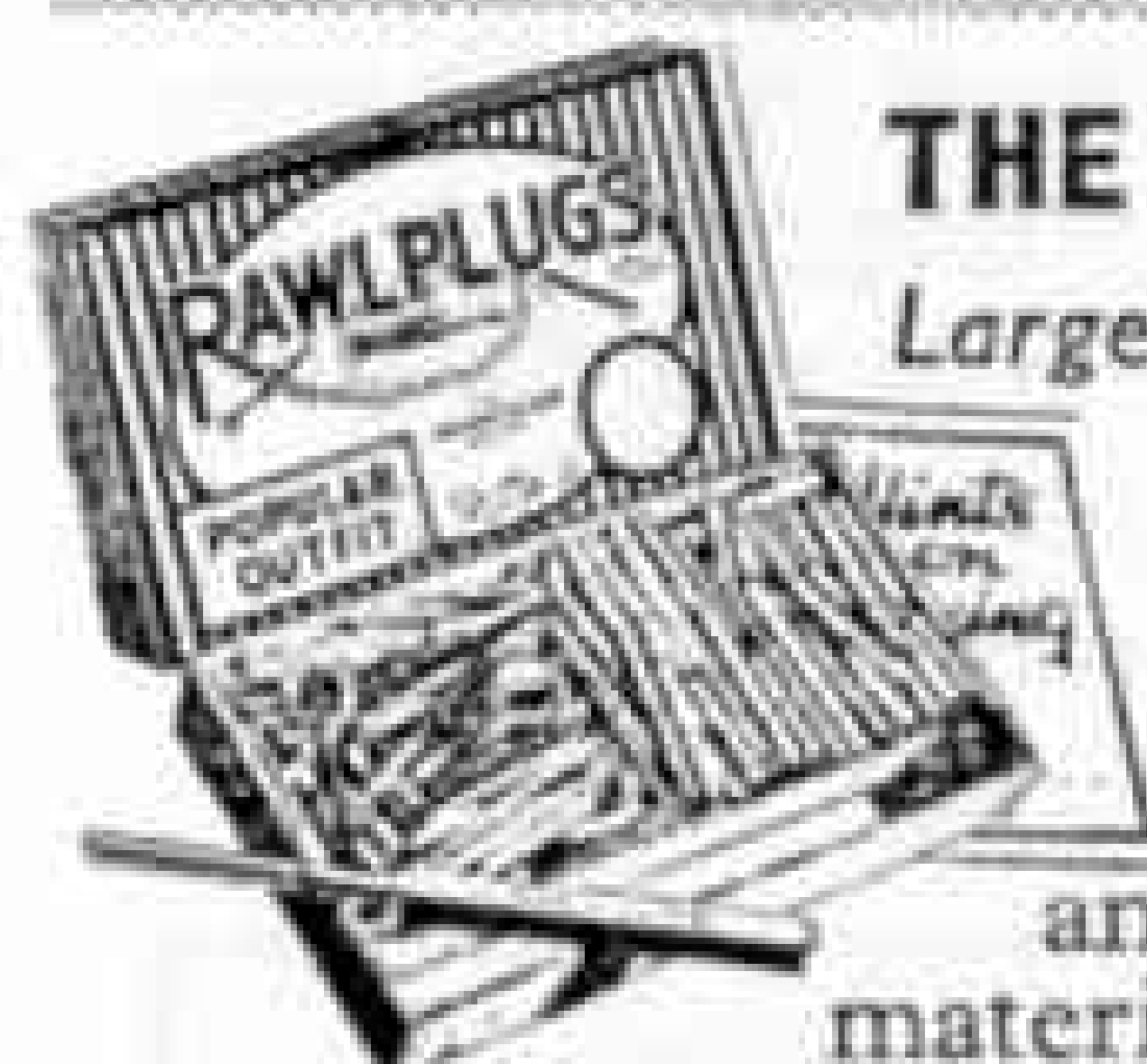
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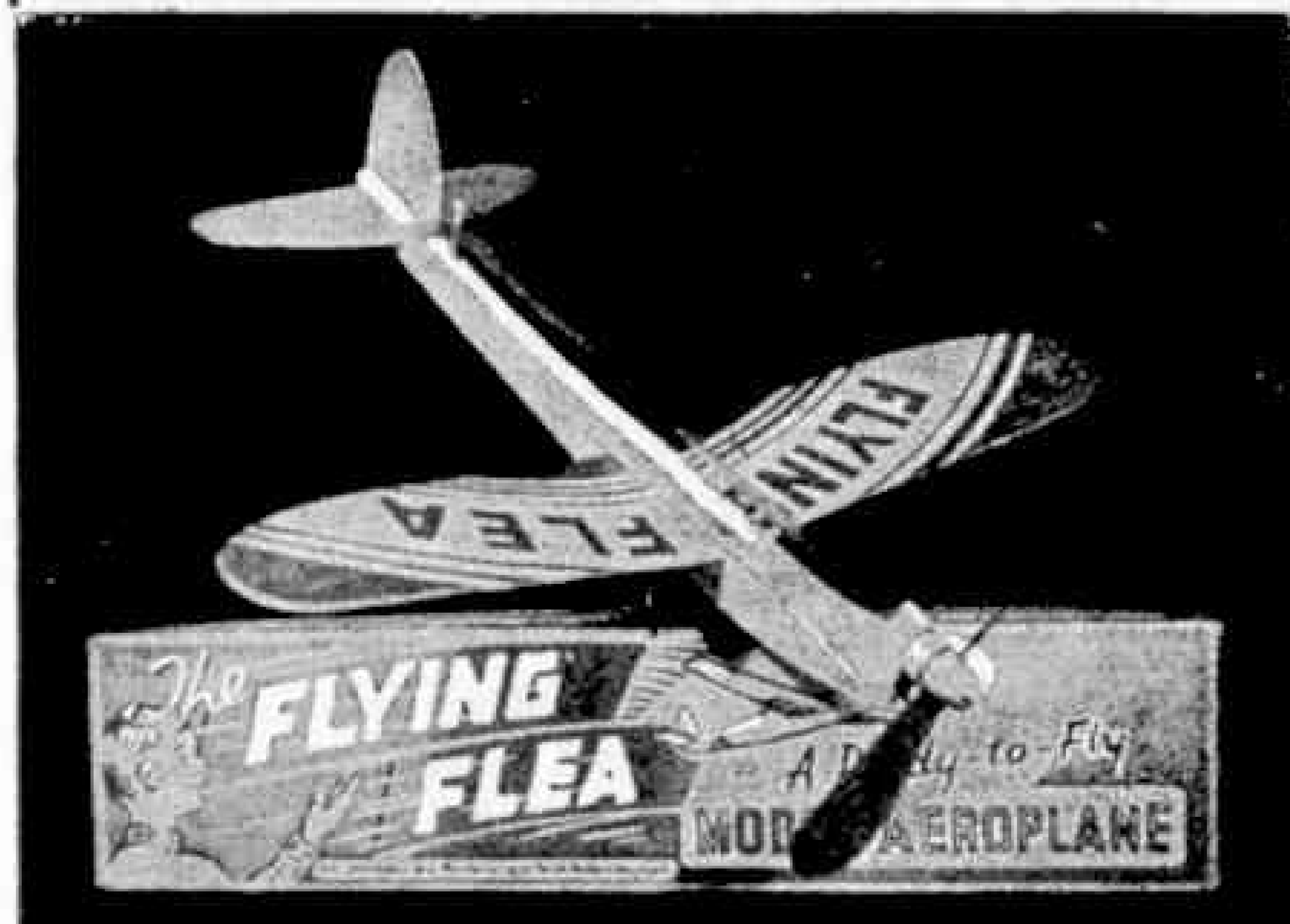
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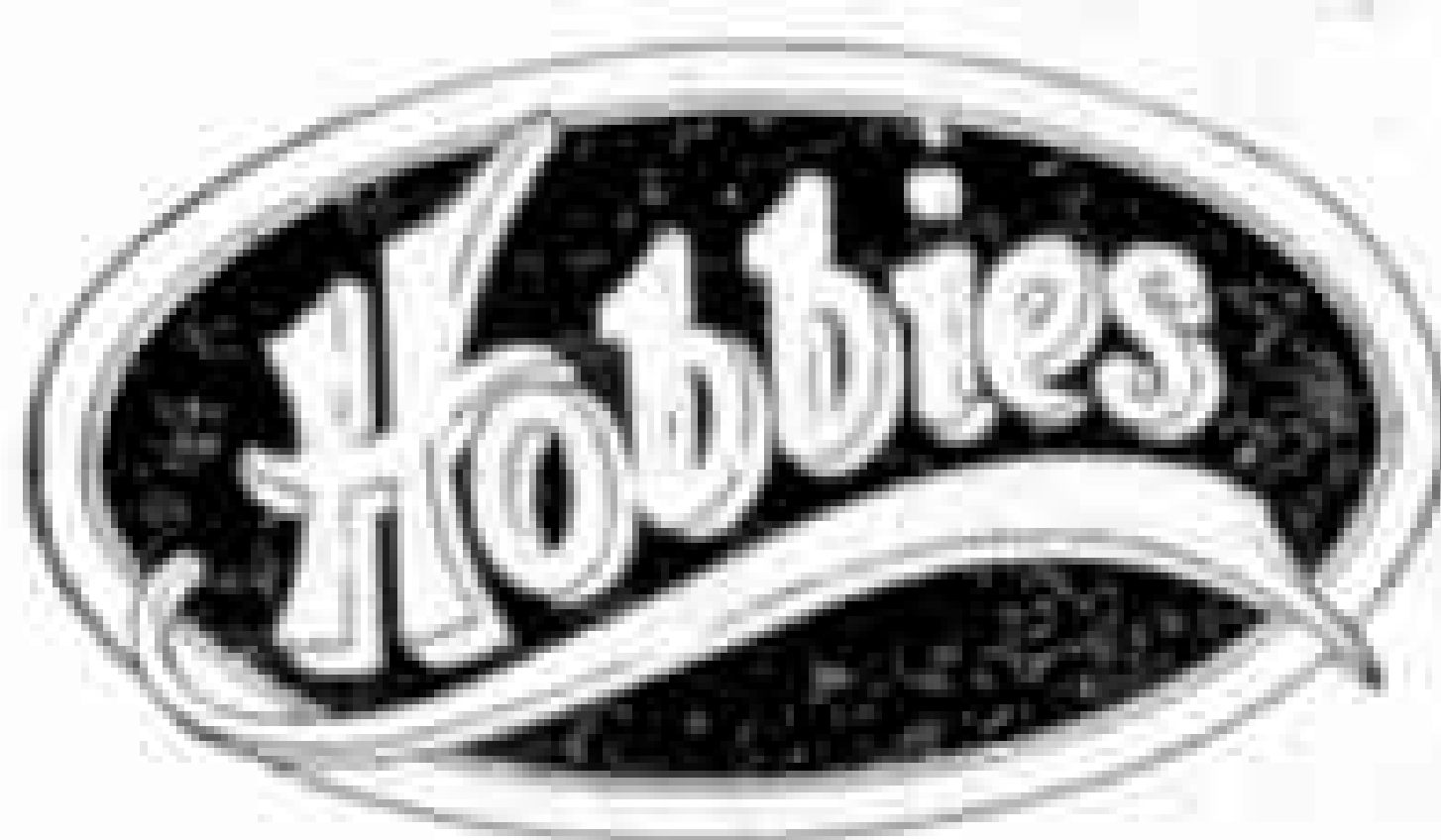


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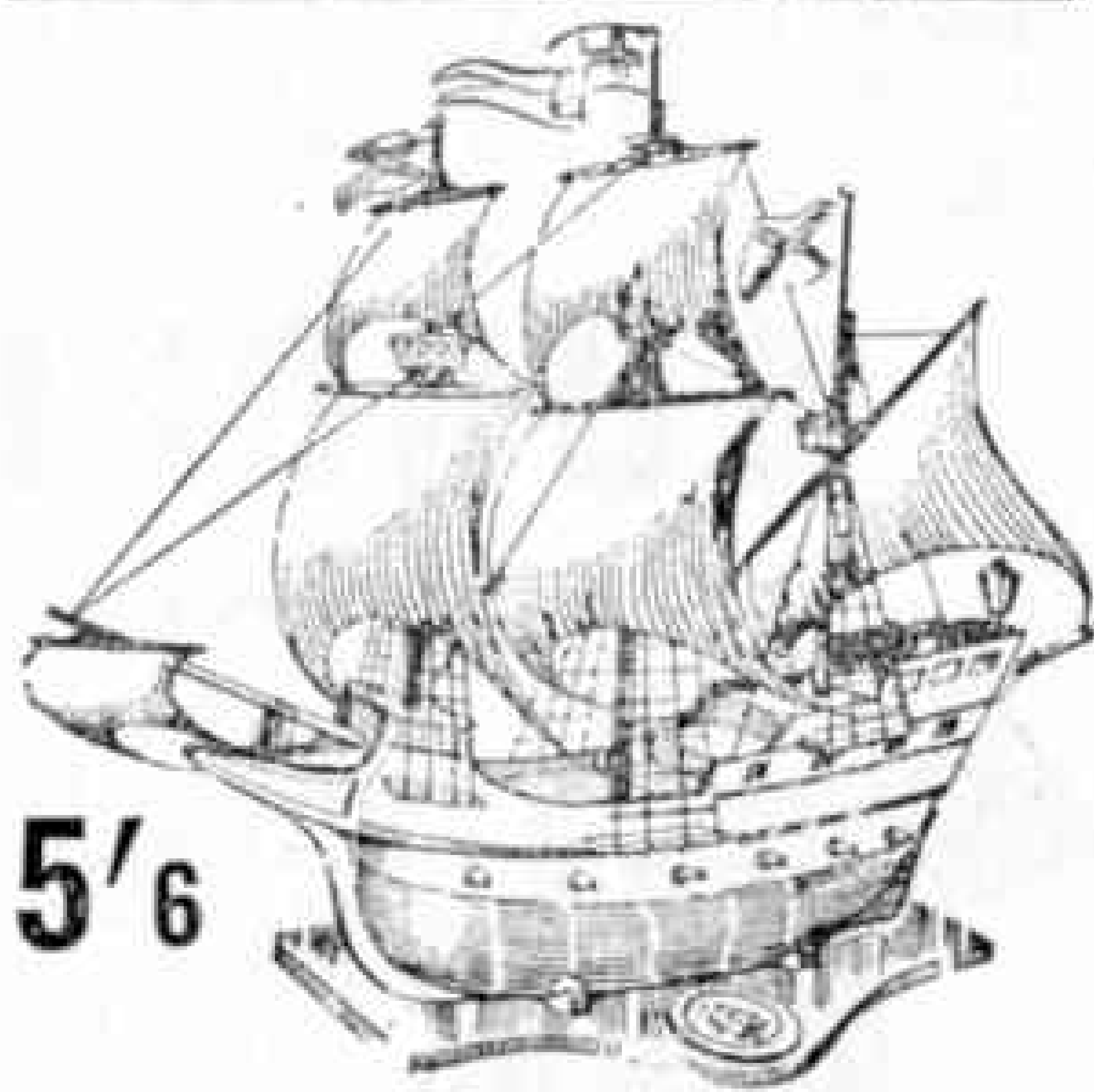
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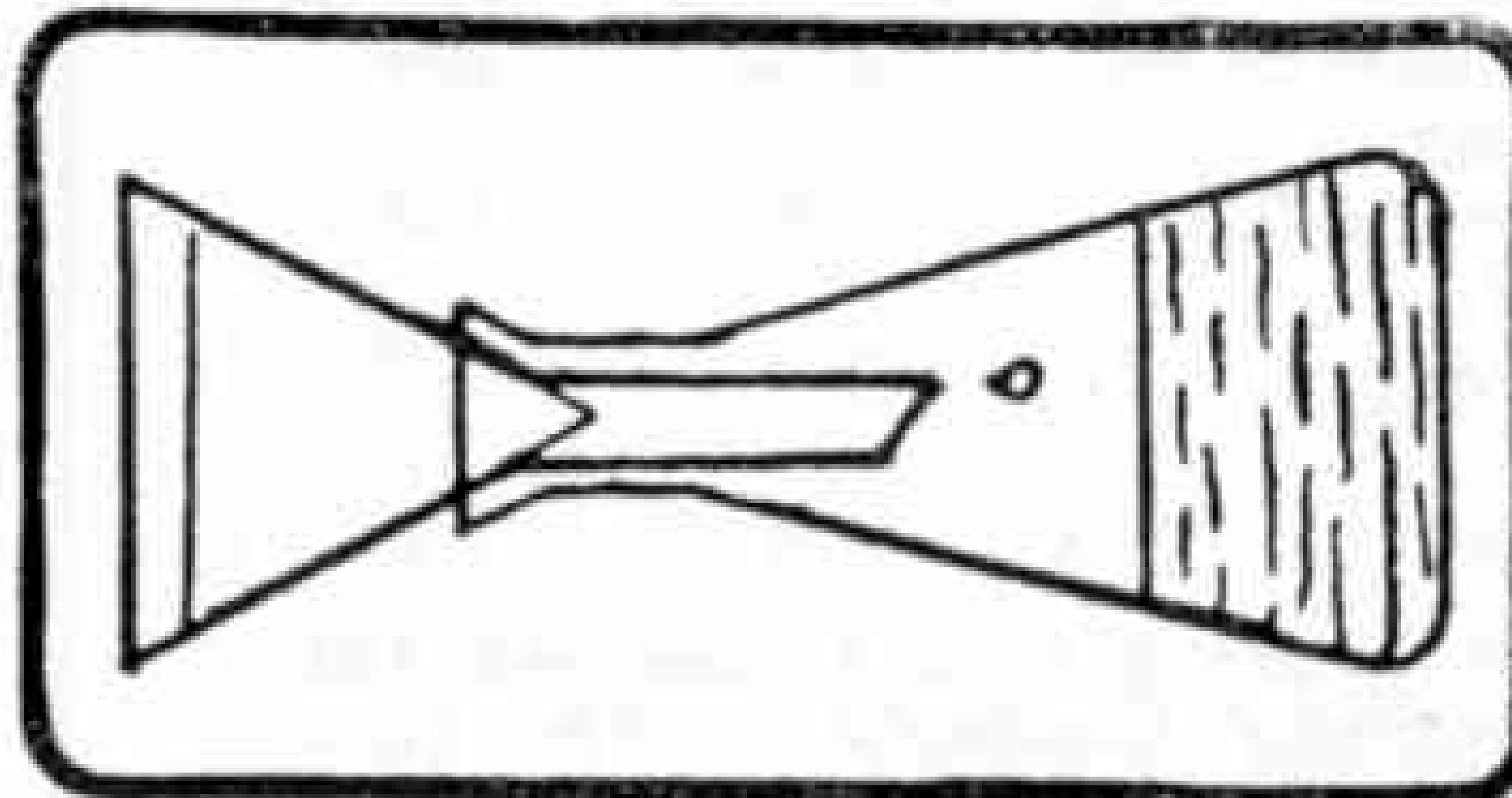
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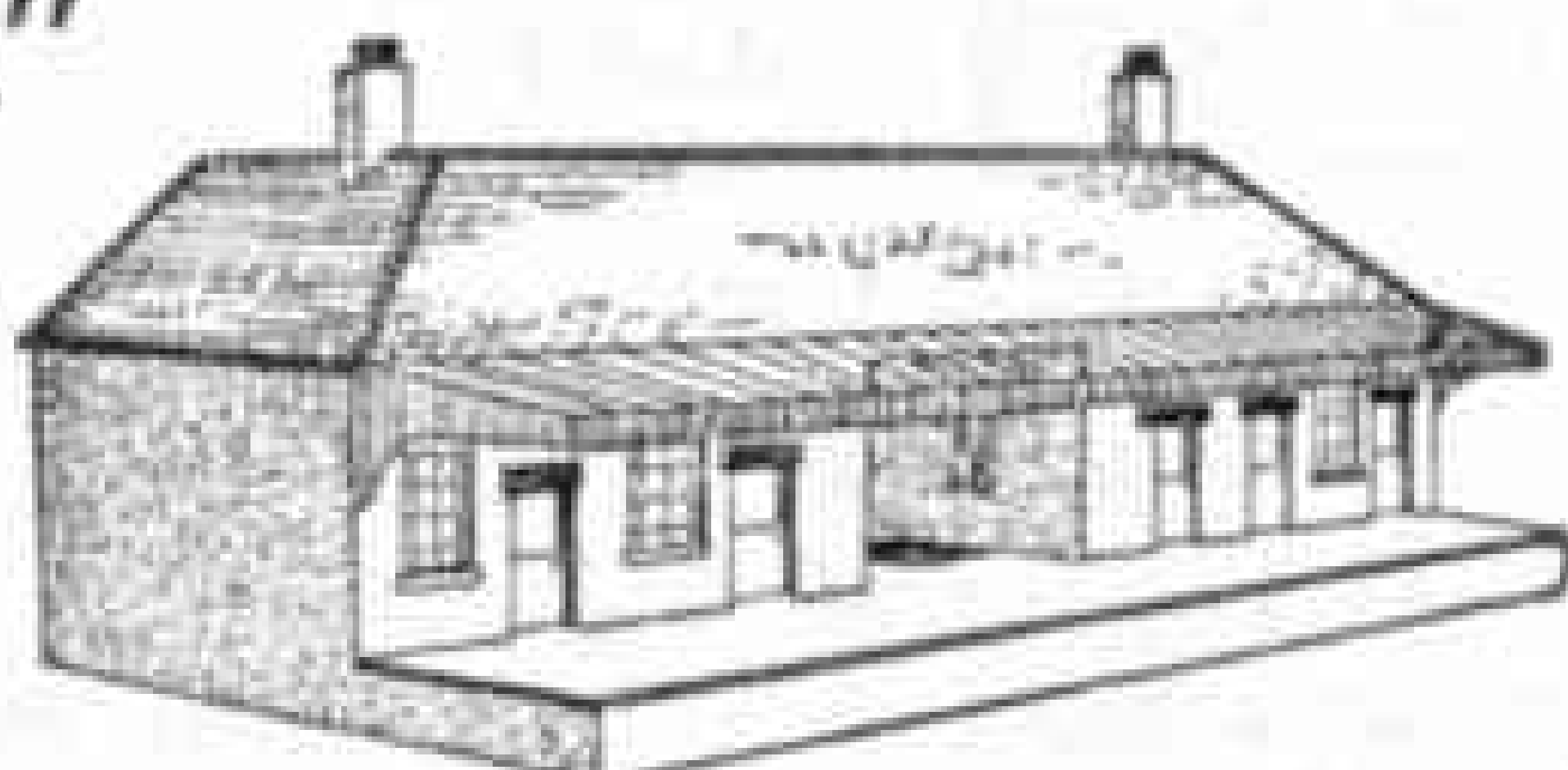


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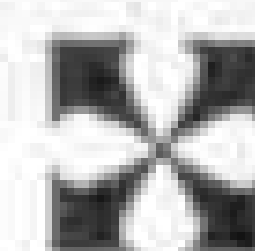
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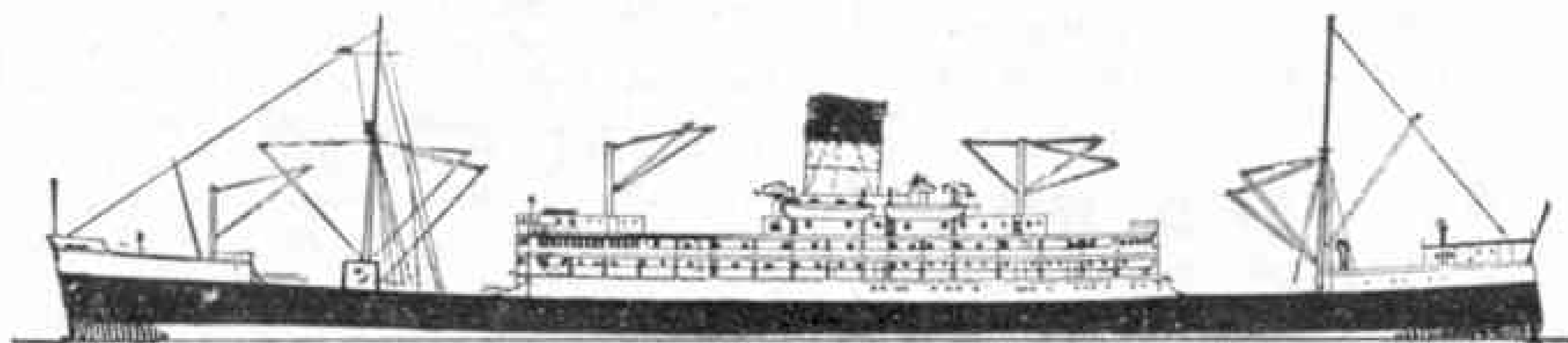
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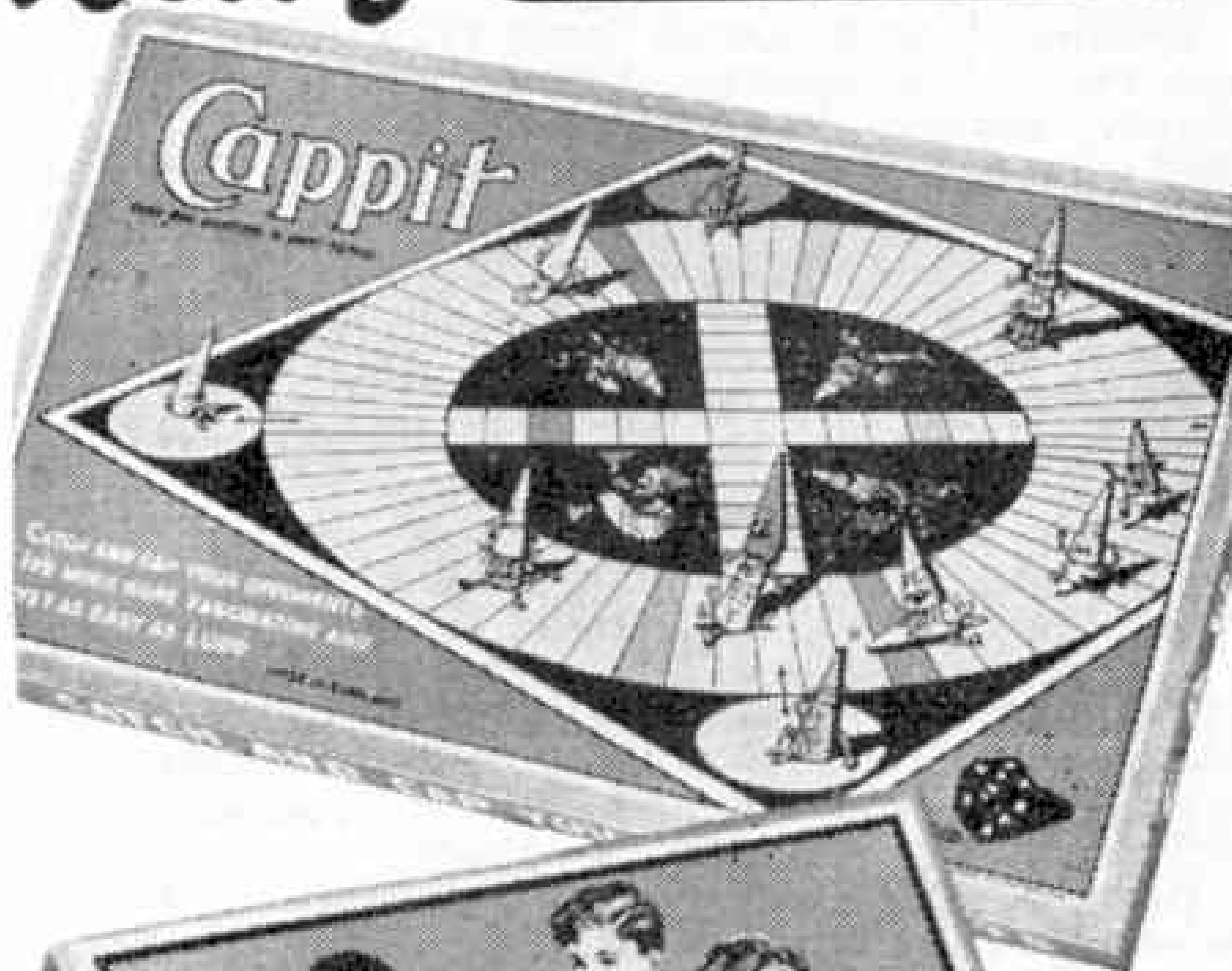
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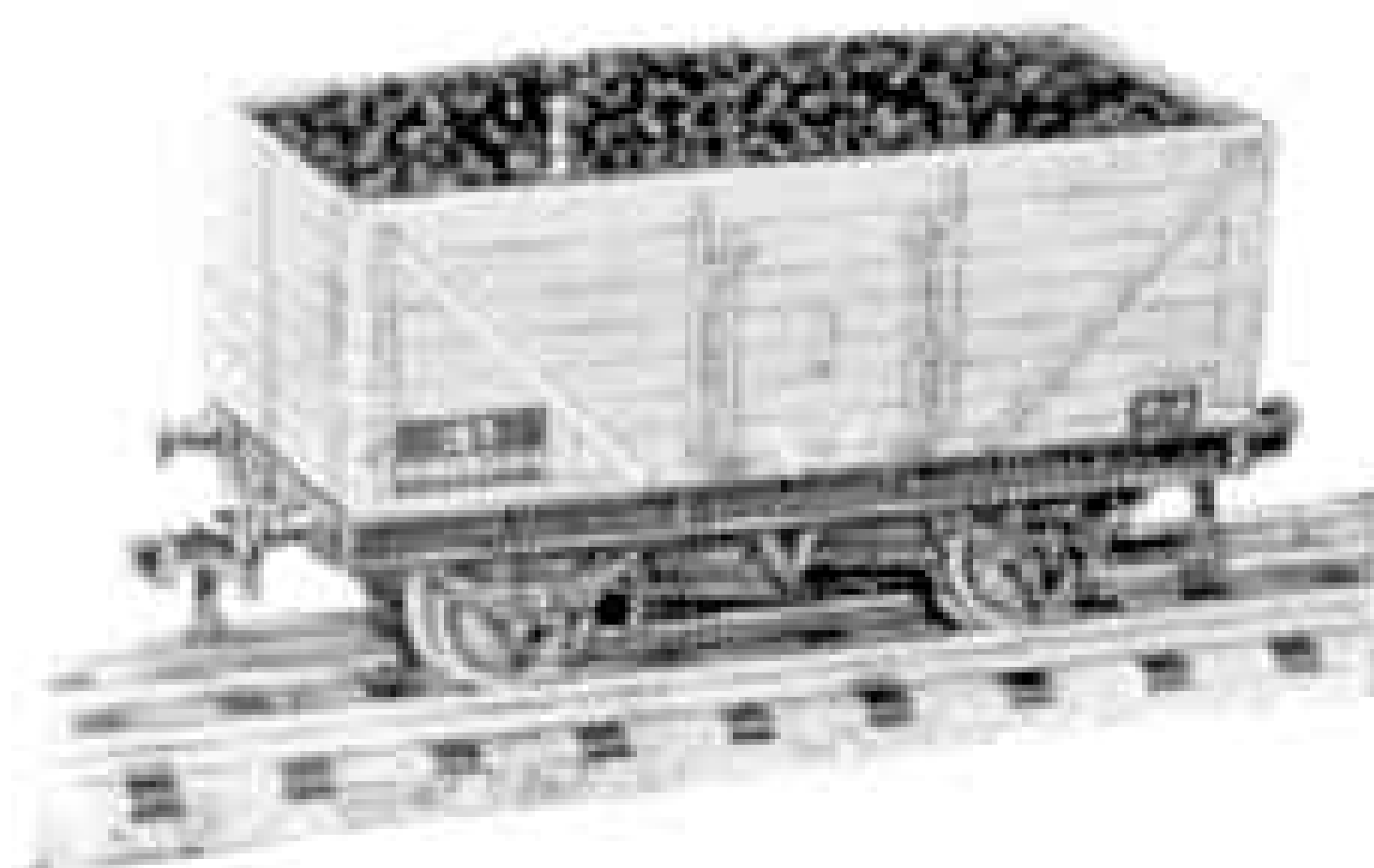
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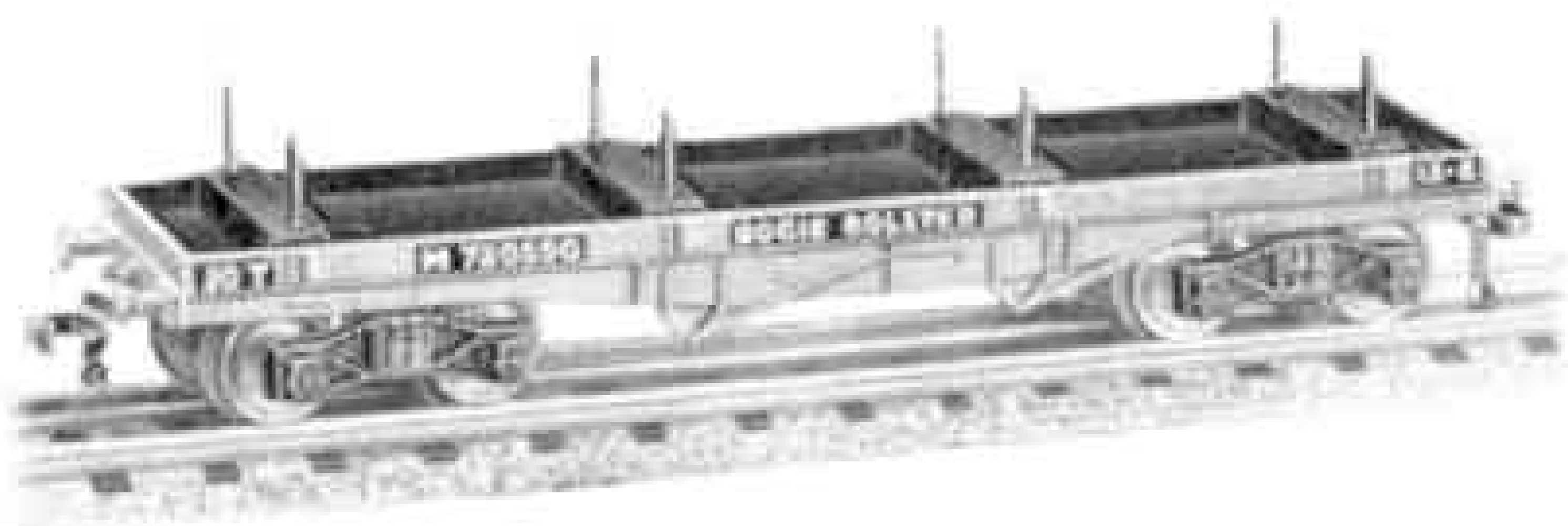
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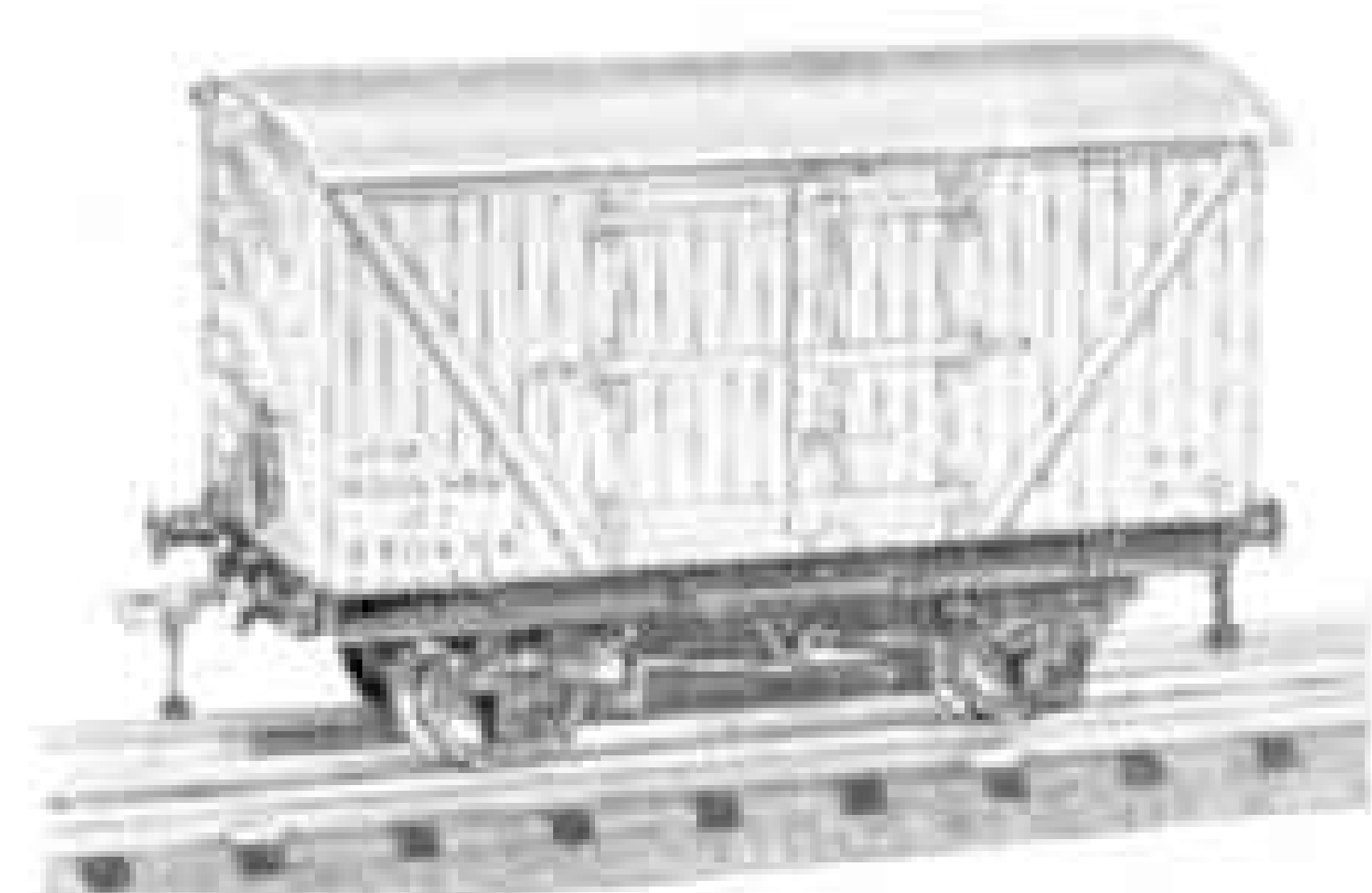
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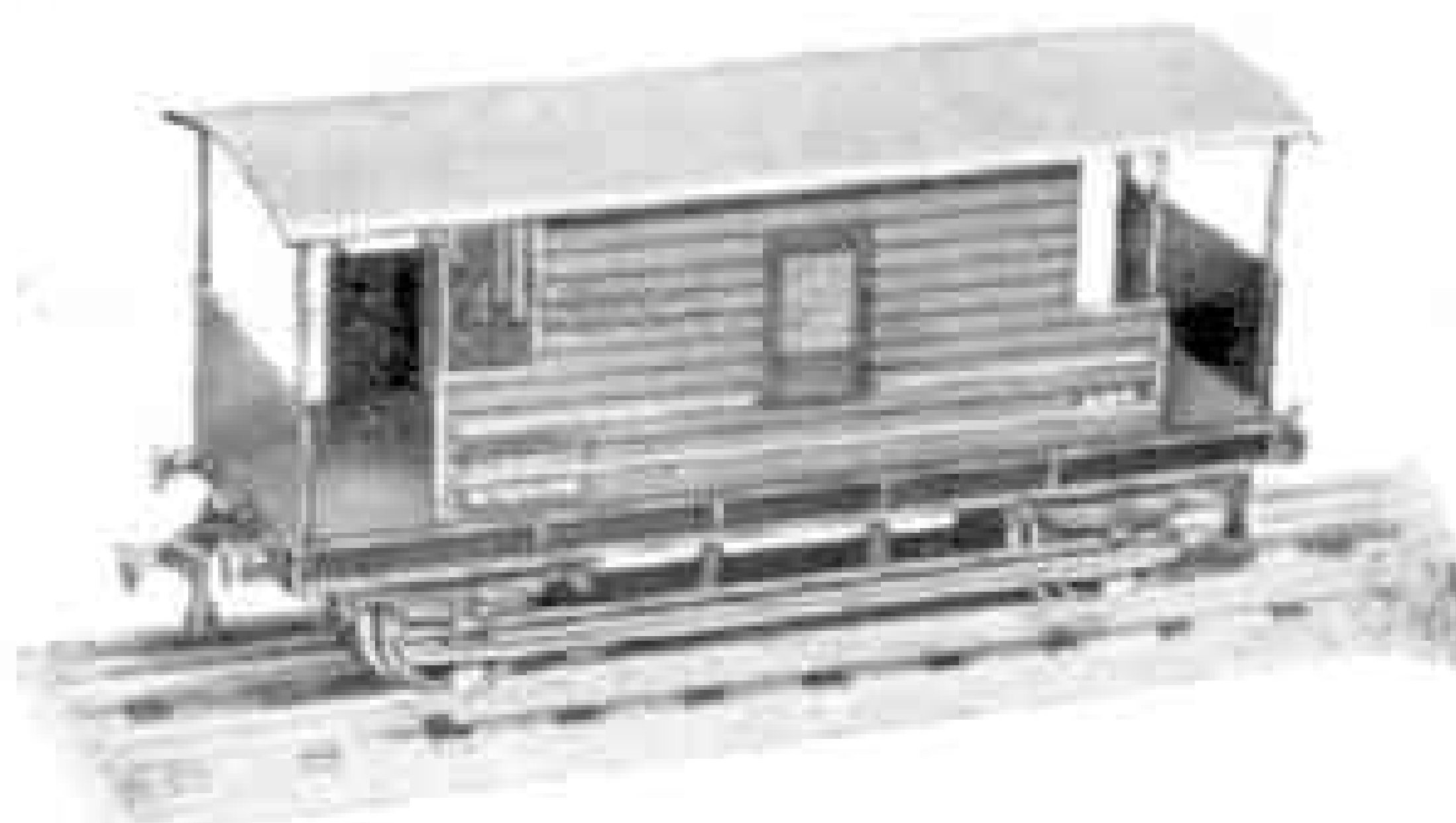
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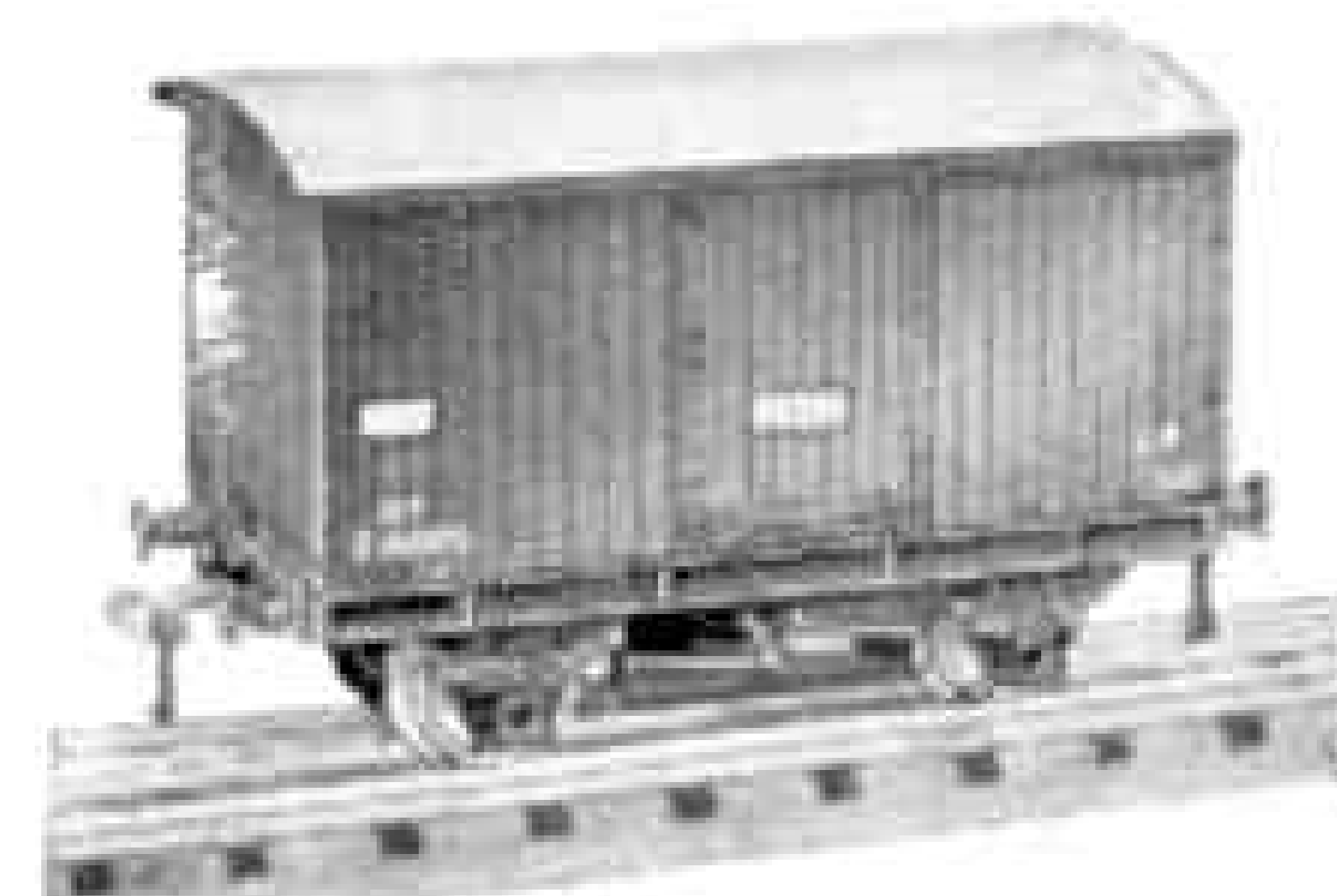
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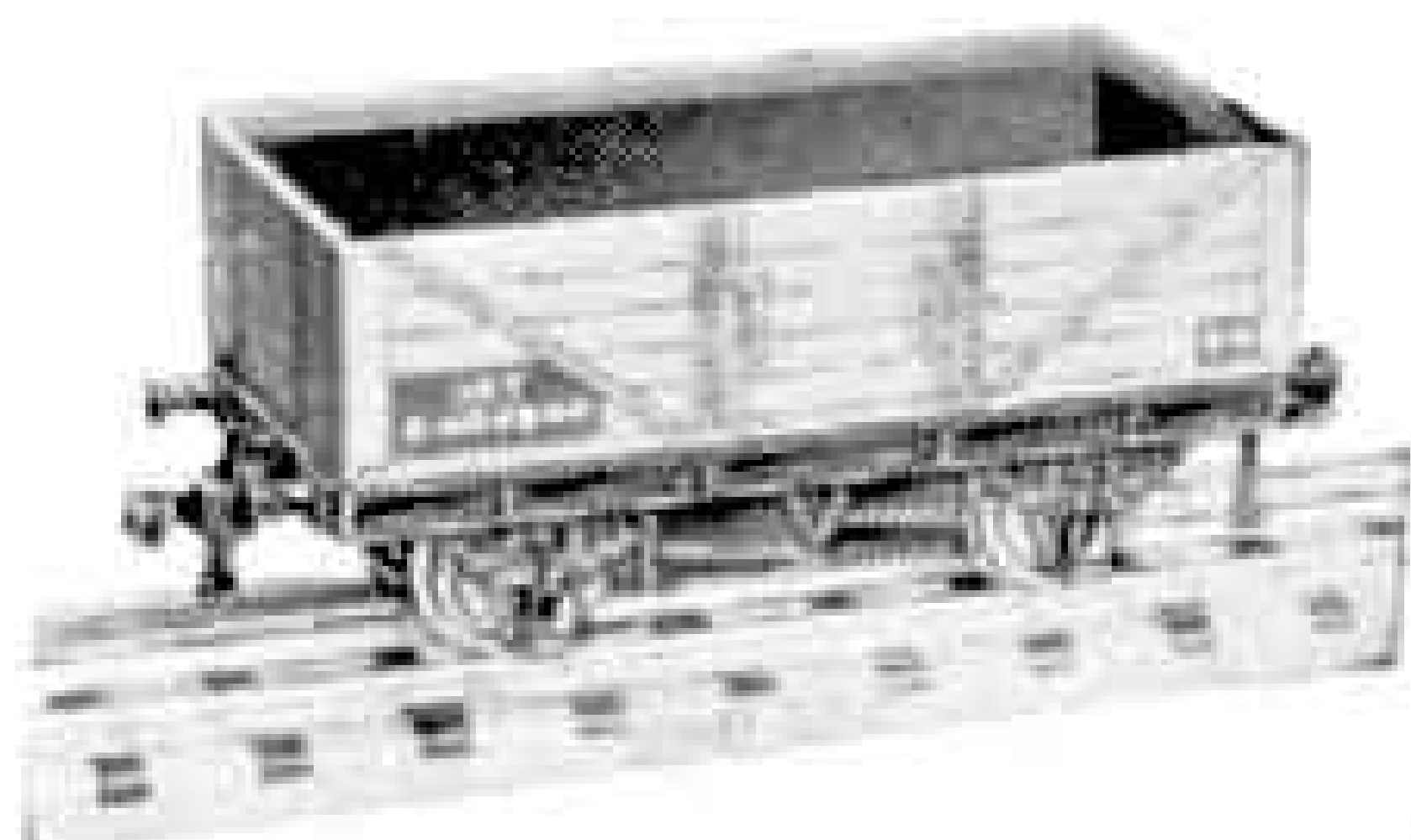
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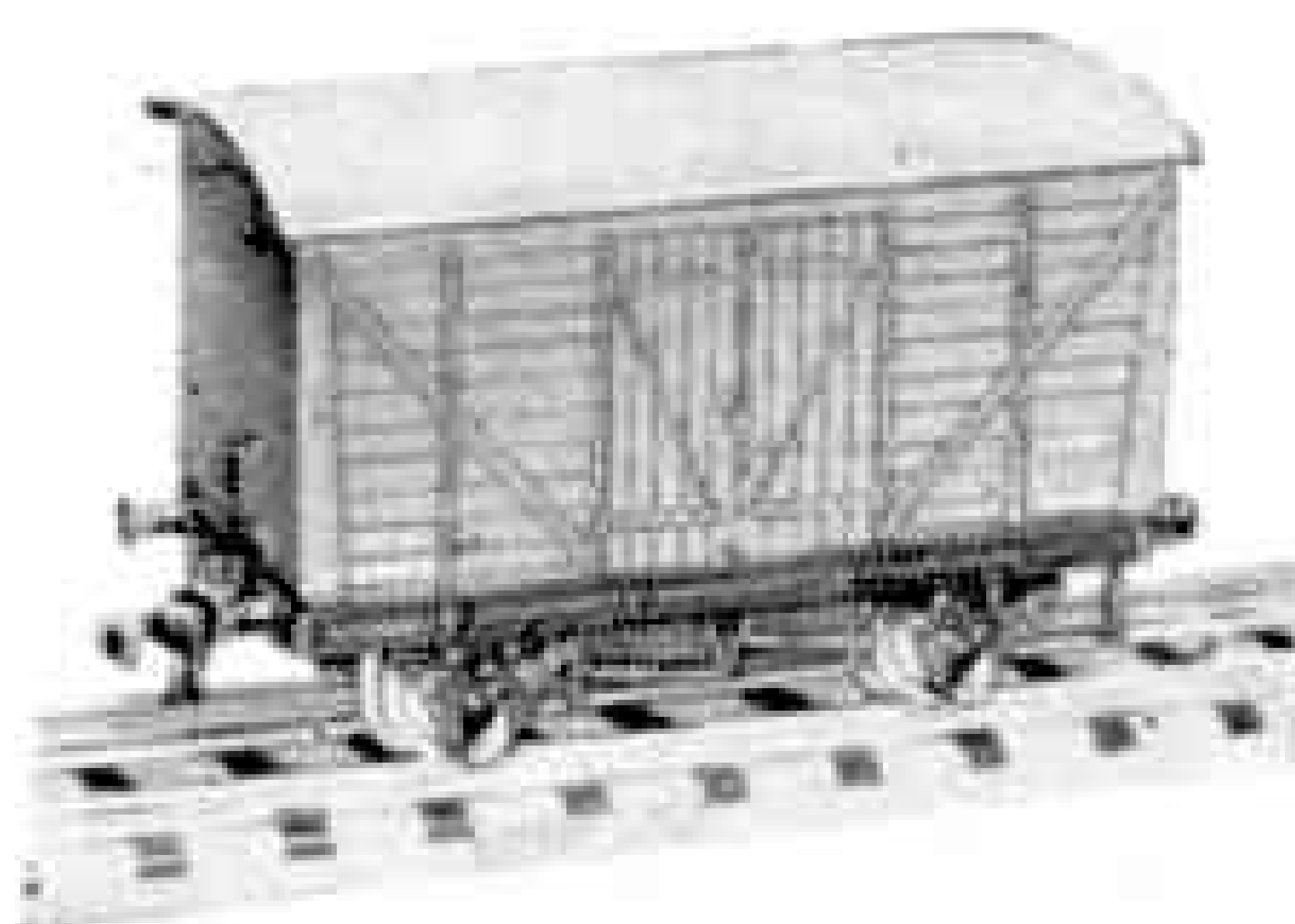
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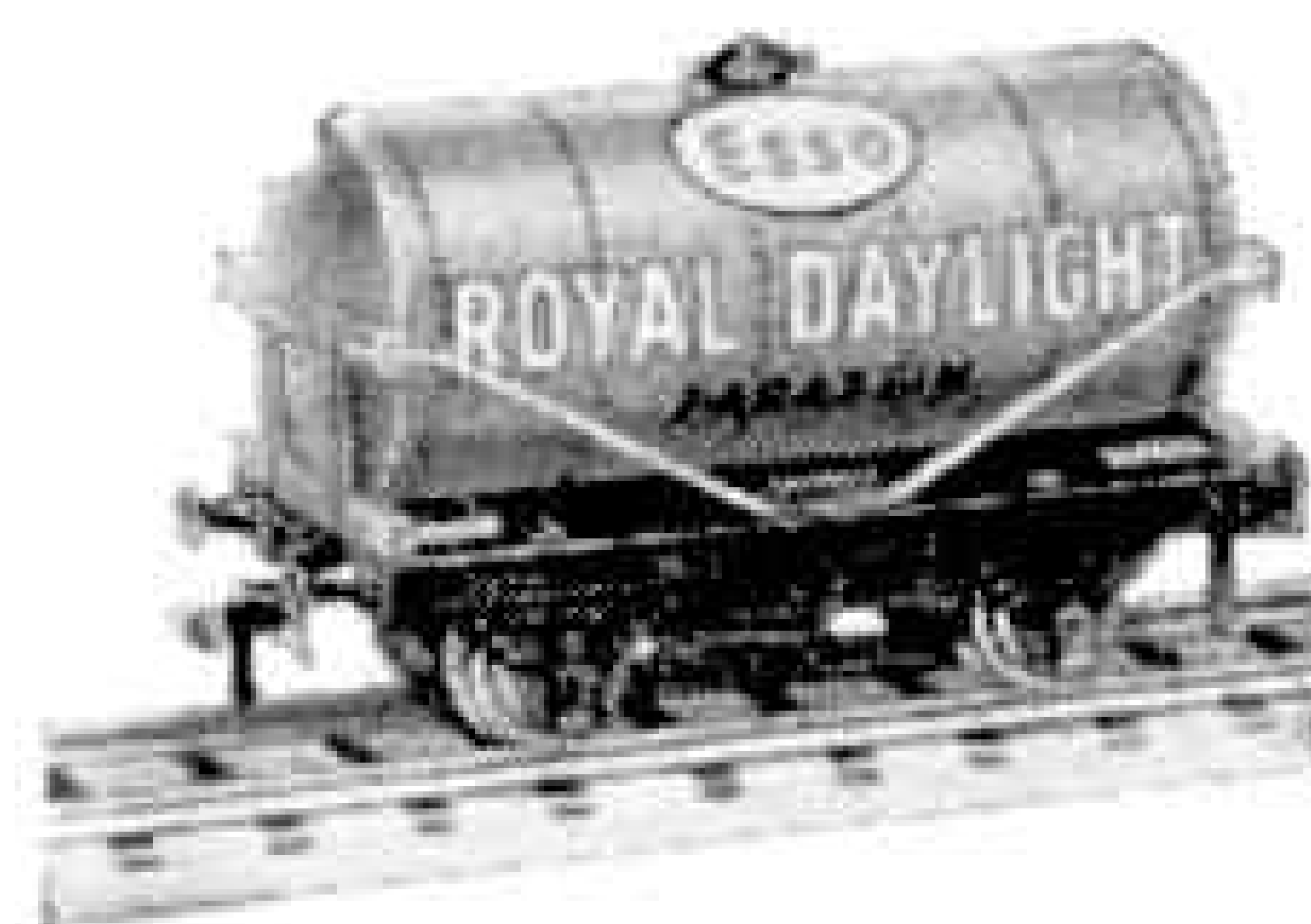
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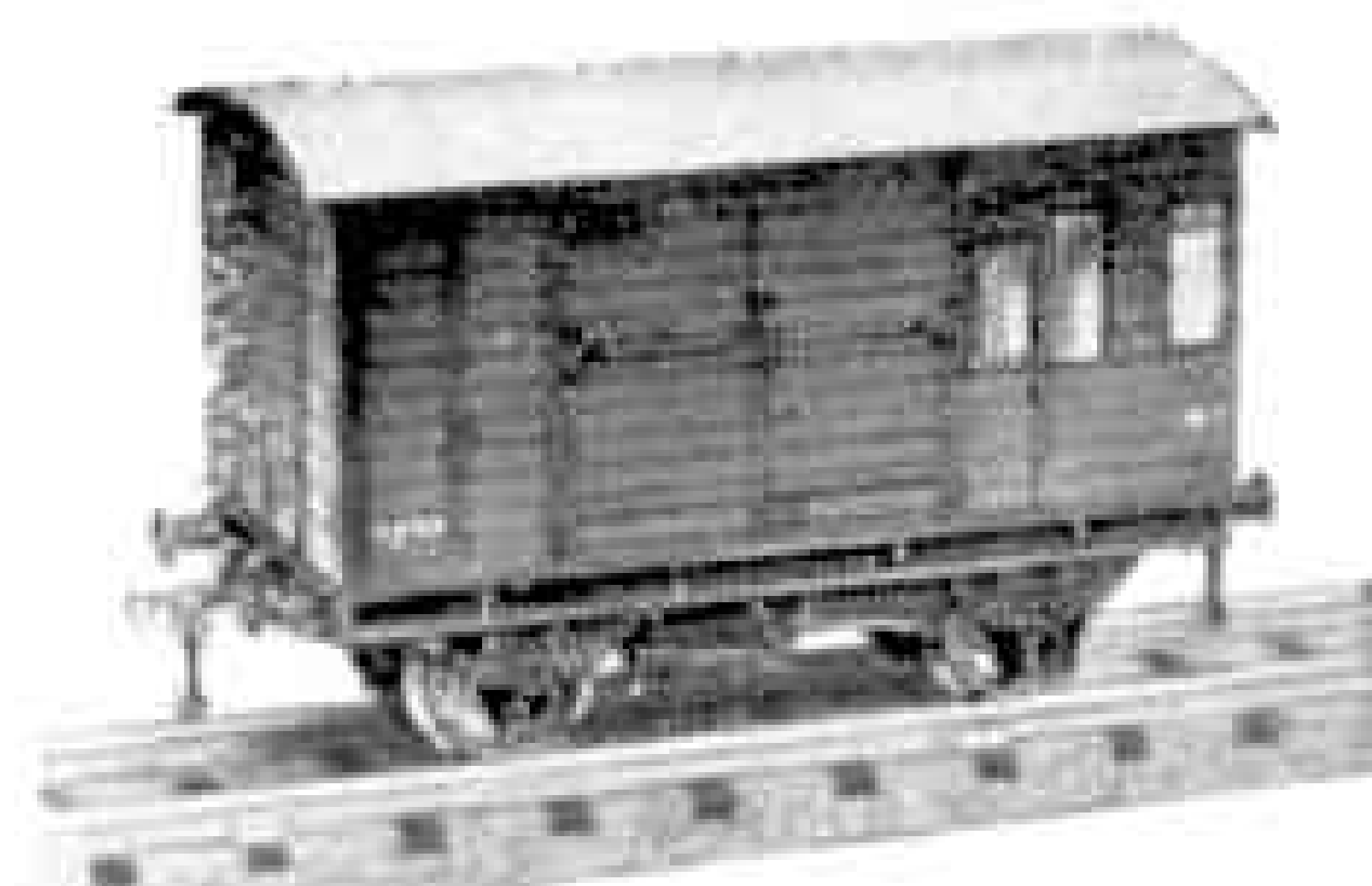
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 D2 High-sided Wagon 4/8



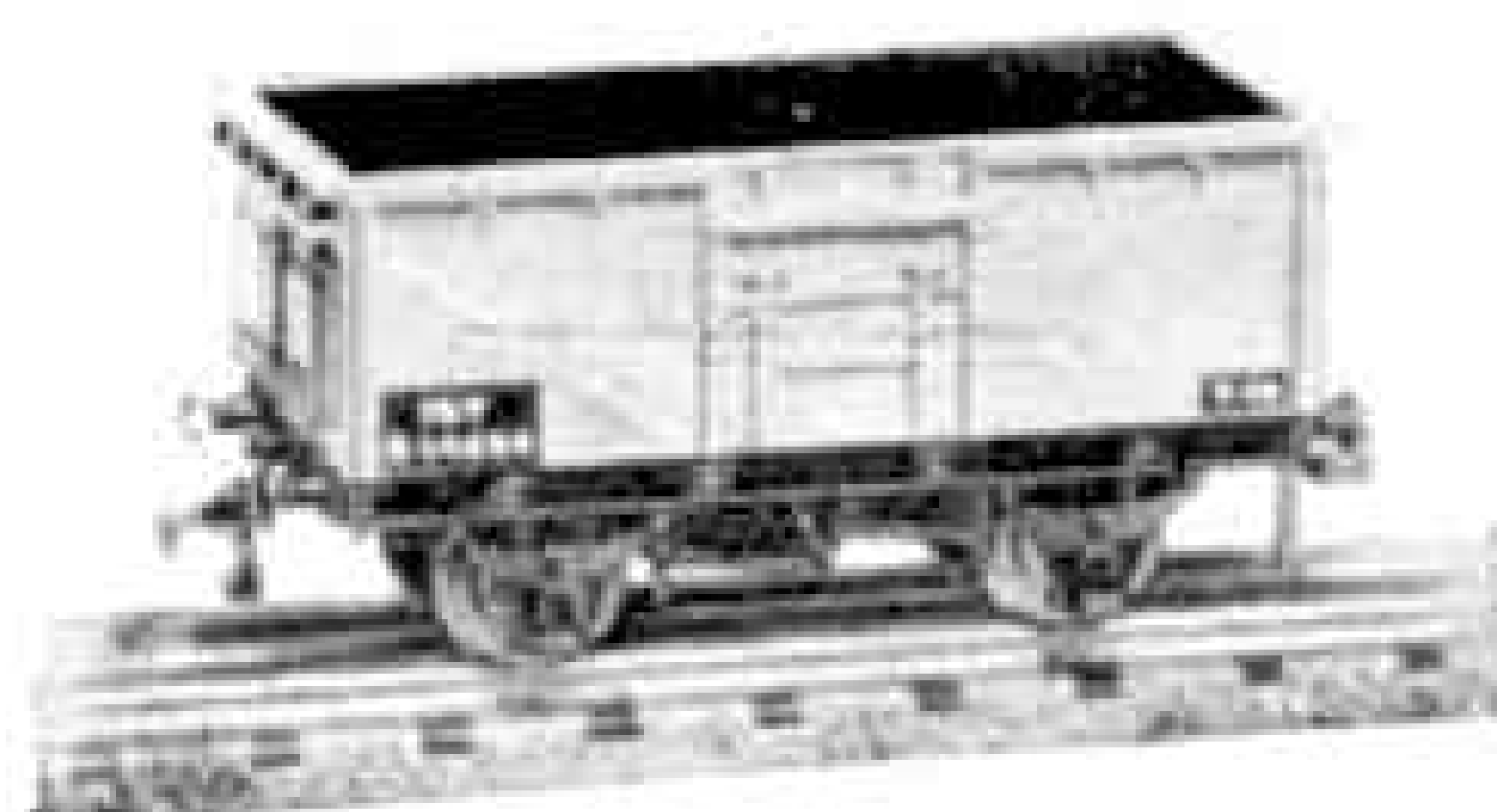
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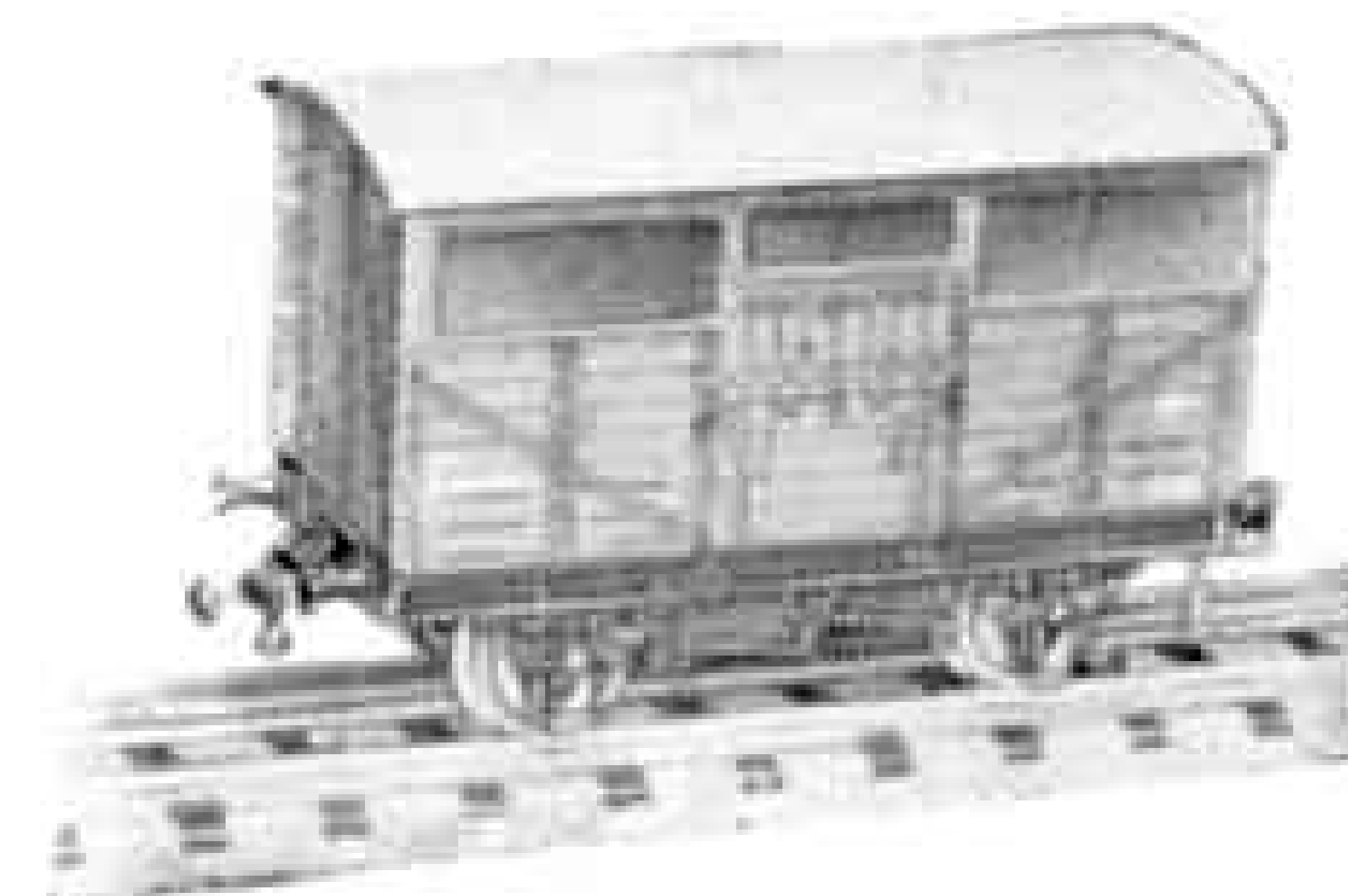
D1 Oil Tank Wagon ... 5/3



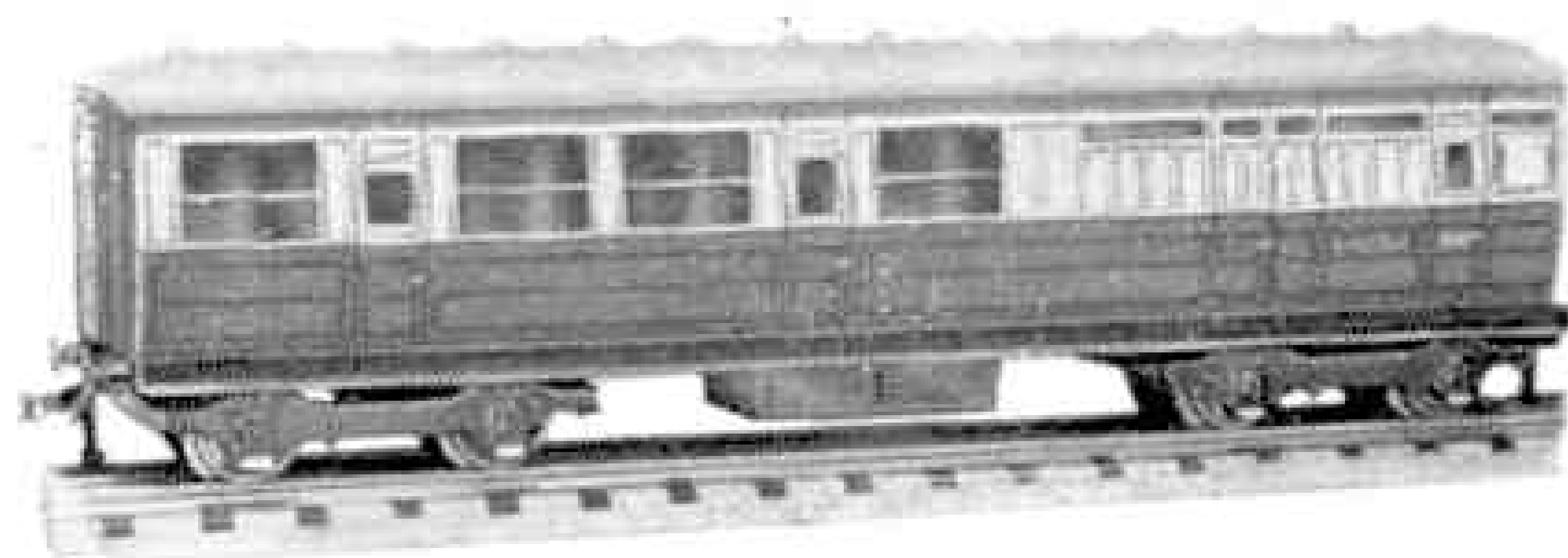
D1 Horse Box 4/11



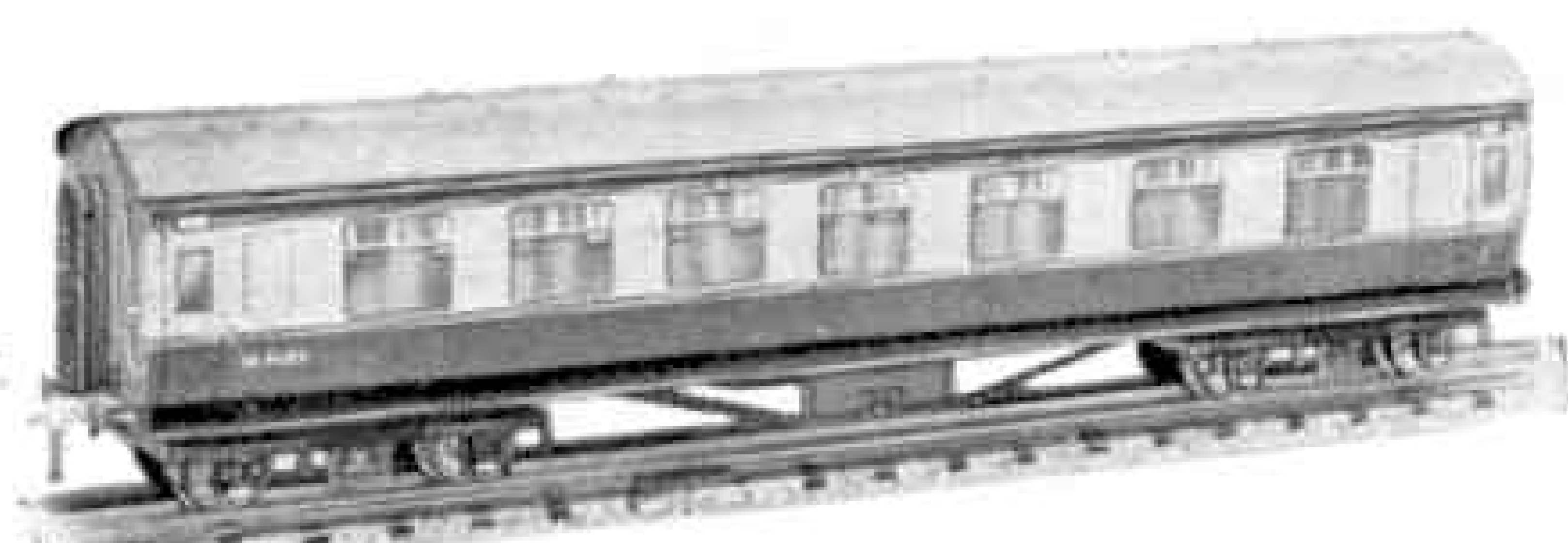
D2 Mineral Wagon 4/11



D1 Cattle Truck 4/11



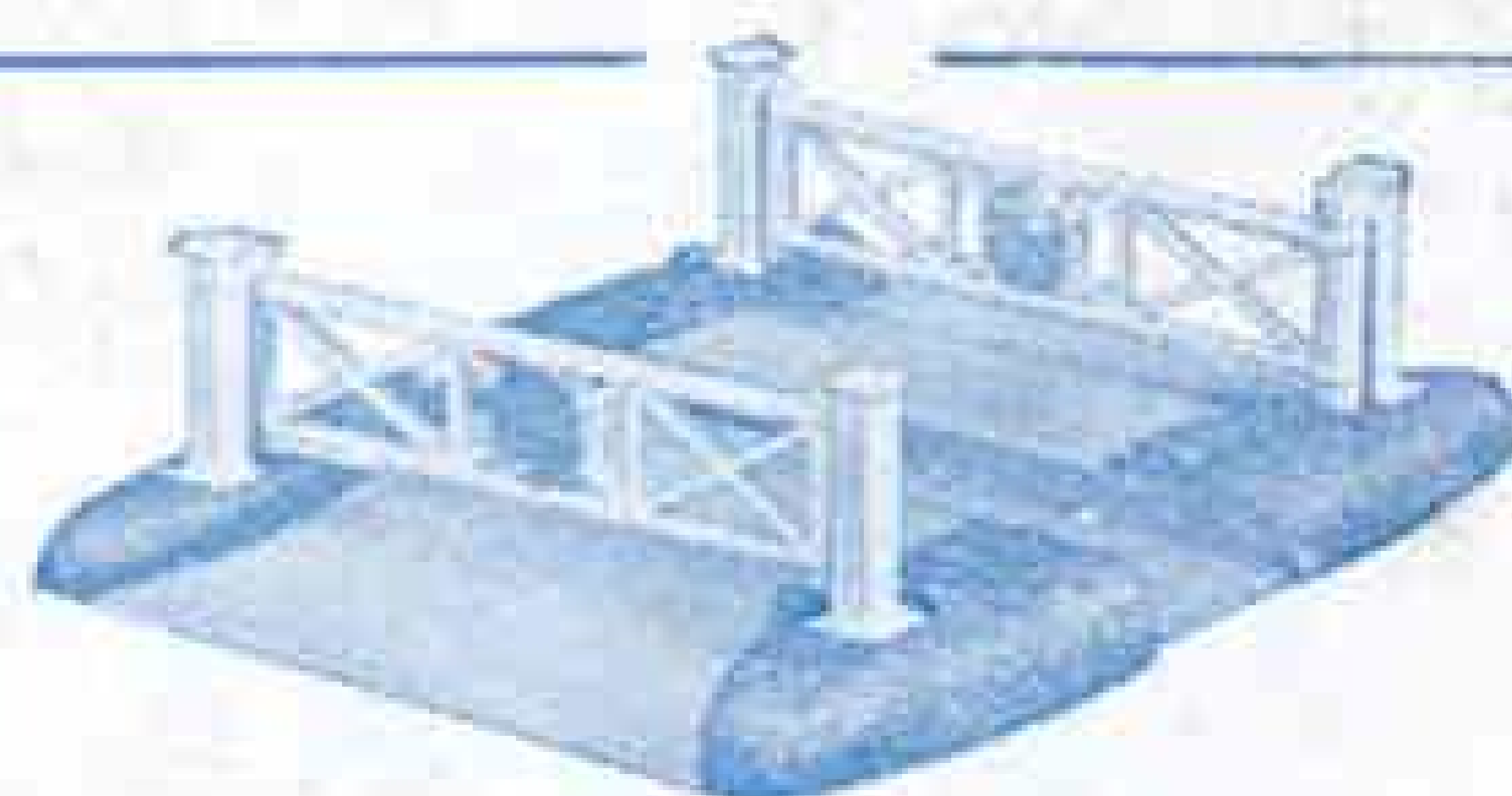
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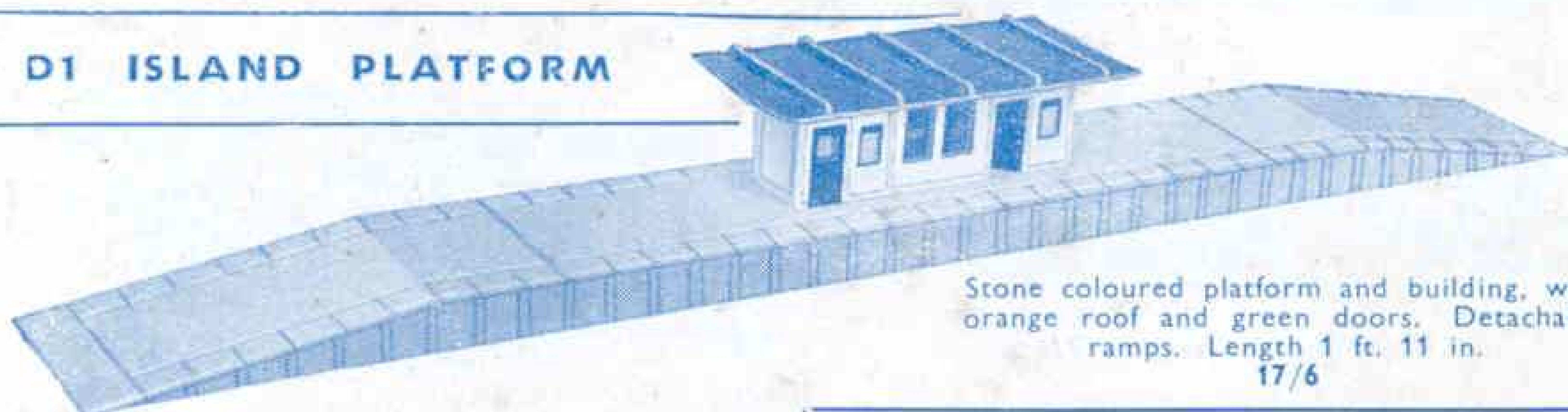
You must get these
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Accessories

D1 LEVEL CROSSING



For single line traffic.
 Hinged gates.
 9/11

D1 ISLAND PLATFORM



Stone coloured platform and building, with orange roof and green doors. Detachable ramps. Length 1 ft. 11 in.
 17/6

All Prices include
 Purchase Tax

D1 THROUGH STATION



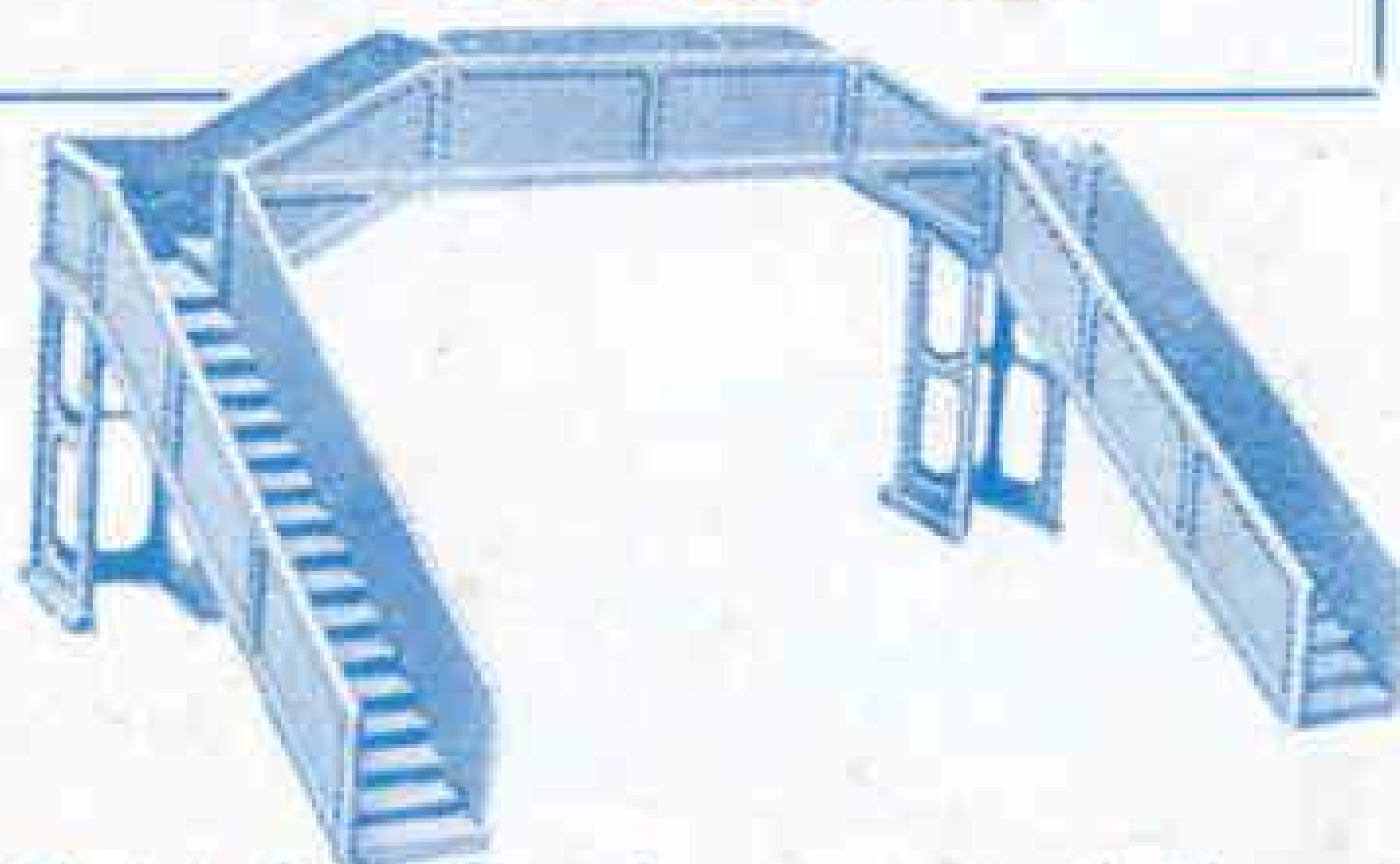
Suburban-type station with attractive approach and entrance hall. Coloured similarly to Island Platform. Detachable ramps. Length 1 ft. 11 in.
 36/6

**ED2
 ELECTRICALLY
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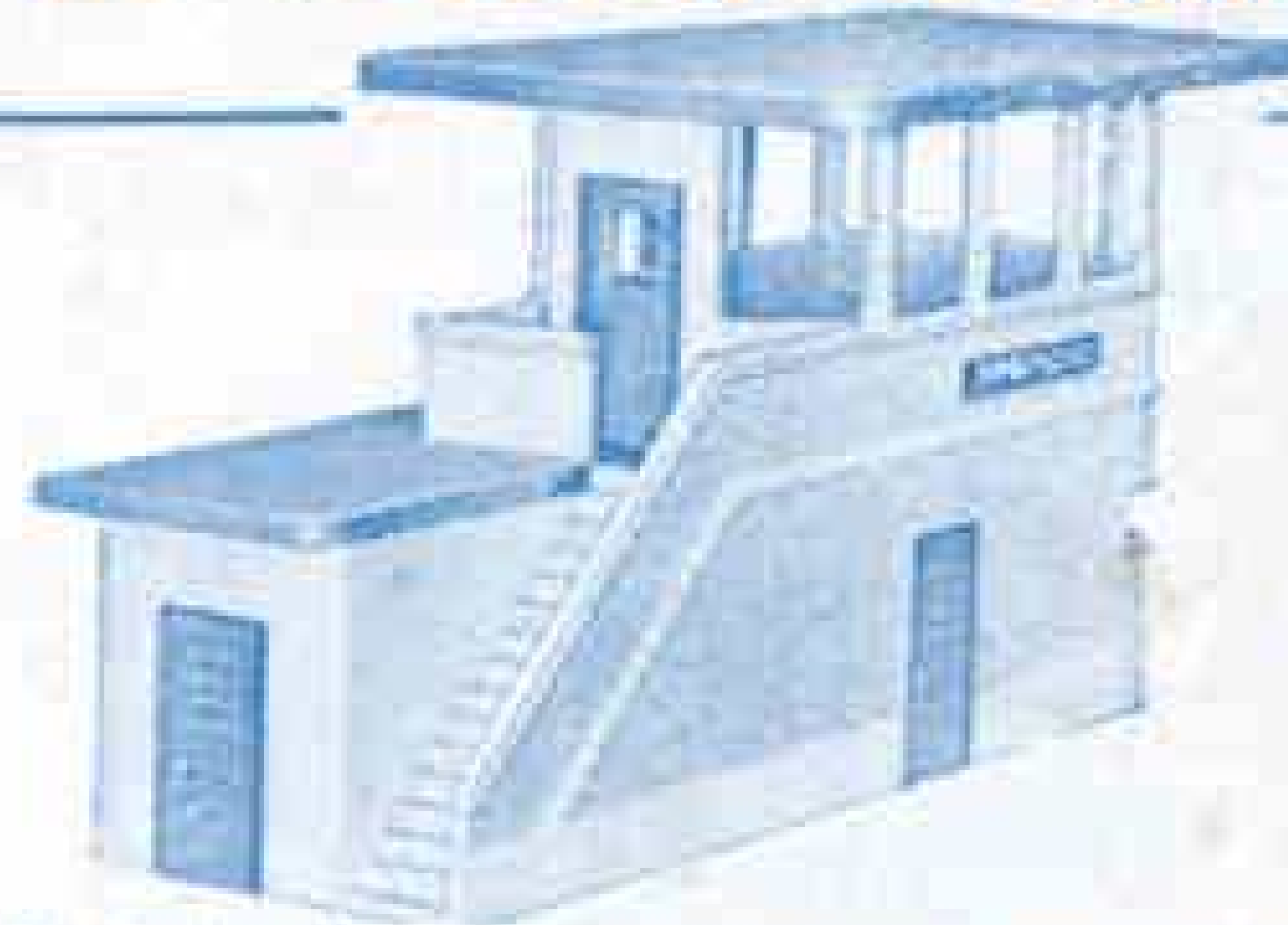
"Home" and
 "Distant" as
 illustrated.
 13/3

D1 FOOTBRIDGE



Model of re-inforced concrete footbridge. It spans a double track.
 9/3

D1 SIGNAL CABIN



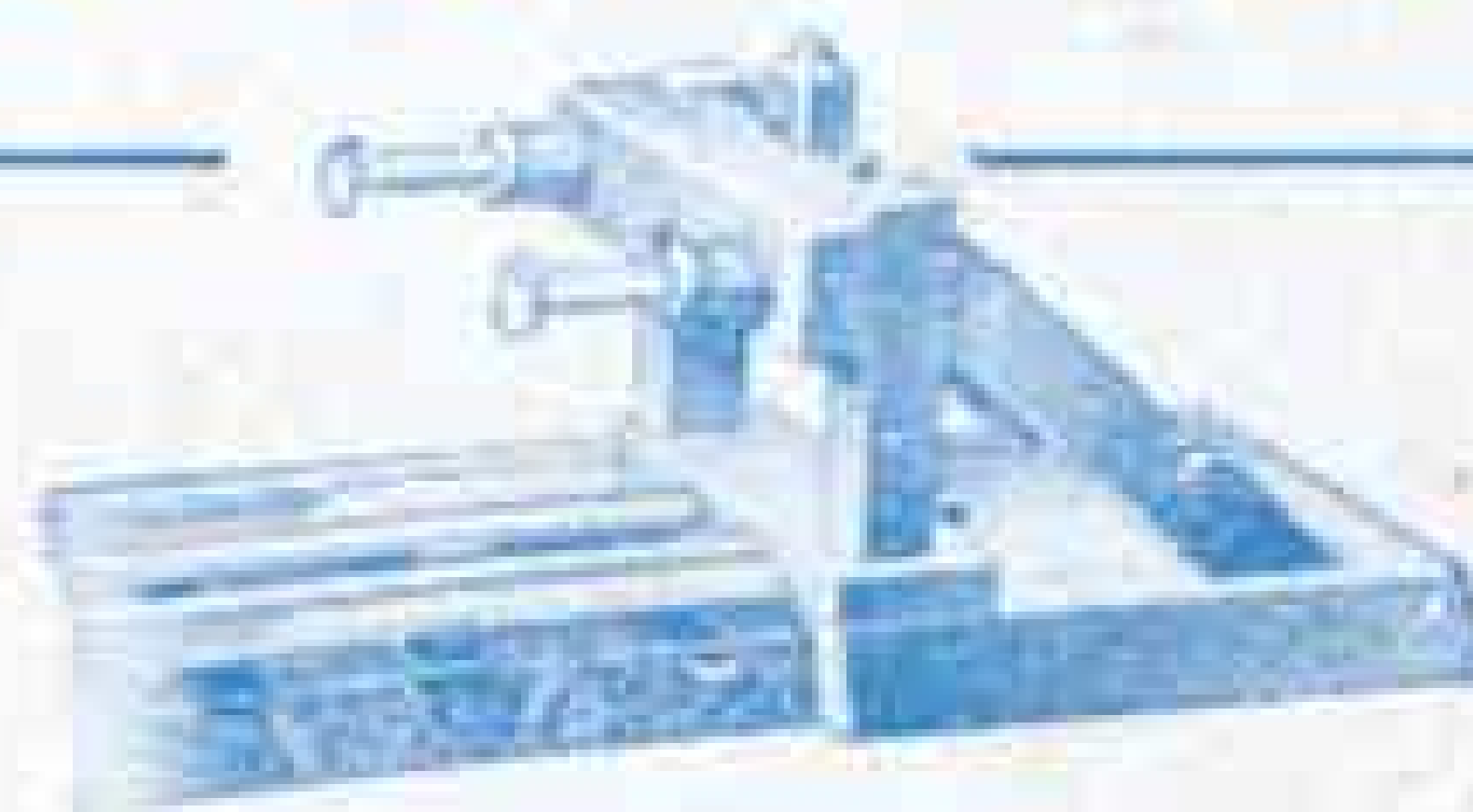
Finished to represent concrete with orange roofs and green doors. Height 3 in. Length 6 3/4 in.
 11/9

MINIATURE FIGURES



Dinky Toys No. 1003—Passengers
 2/7

D1 BUFFER STOP



Working spring head,
 2/1

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